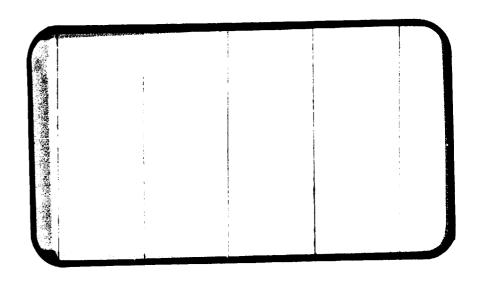


NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA CR. 13442



(NASA-CR-134426) WIND TUNNEL TESTS OF AN 0.015-SCALE CONFIGURATION 140A/B SPACE SHUTTLE ORBITER MODEL (67-0) IN THE NASA/LRC 8-FCCT TFT TO OBTAIN TRANSONIC AERODYNAMIC FORCE DATA (OA106) (Chrysler Corp.) 197 p

N75-14814

Unclas G3/18 06666

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER
CORPORATION

DMS-DR-2120 NASA CR-134,426

WIND TUNNEL TESTS OF AN 0.015-SCALE

CONFIGURATION 140A/B SPACE SHUTTLE ORBITER

MODEL (67-0) IN THE NASA/LRC 8-FOOT TPT

TO OBTAIN TRANSONIC AERODYNAMIC FORCE DATA

(0A106)

bу

R. Burrows Rockwell International Space Division

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services Chrysler Corporation Space Division New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:

LaRC 8-Foot TPT 668

NASA Series Number:

0A106

Test Date:

17 through 18 December 1973

Model Number: Occupancy Hours: 67-0 24

FACILITY COORDINATOR:

David Stone Langley Research Center SSD, Vehicle Analysis Branch Bldg. 1247-B, Room 120B Mail Stop 163-A Langley Station Hampton, Virginia 23665

Phone: (703) 827-2483

AERODYNAMICS ANALYSIS

ENGINEER:

PROJECT ENGINEERS:

R. Burrows

Mail Code AC07 Rockwell Int'l Space Div. SSD, Aerodynamics Sec. 12214 Lakewood Blvd.

Downey, Calif. 90421

Phone: (213) 922-2440

Tom Cornelius Bernard Spencer, Jr. Langley Research Center Mail Code ACO7

Bldg. 1251, Room 221

Mail Stop 411 Langley Station

Rockwell International 12214 Lakewood Blvd. Downey, Calif. 90421

Hampton, Virginia 23665 Phone: (213) 922-1526

Phone: (703) 827-3911

DATA MANAGEMENT SERVICES:

Prepared by:

-- V. W. Sparks, D. A. Sarver

Operations -- Maurice Moser, Jr.

Reviewed by:

G. G. McDonald, J. L. Glynn

Approved: /) (

N. D. Kemp, Manager

Data Management Services

Concurrence:

J//G. Swider, Manager Flight Technology Branch

Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

WIND TUNNEL TESTS OF AN 0.015-SCALE CONFIGURATION 140A/B

SPACE SHUTTLE ORBITER MODEL (67-0)

IN THE NASA/LRC 8-FOOT TPT TO OBTAIN

TRANSONIC AERODYNAMIC FORCE DATA (0A106)

By R. Burrows, Rockwell International Space Division

ABSTRACT

This report contains the results of wind tunnel tests of the NASA/ Rockwell 0.015-scale Configuration 4 (140A/B) Orbiter model (67-0).

These tests were conducted to obtain longitudinal stability and control data for Mach numbers from 0.35 to 1.2. Data were obtained for an alpha range of -2° to $+22^{\circ}$ at beta = 0° .

The effect of speedbrake deflection and body flap deflection was obtained through the Mach range. Boundary layer transition strips were used on the model.

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PLOTTED COEFFICIENTS SCHEDULE:			

- (A) CN, CLM, CA, CY, CYH, CBL, CL, CD, L/D VERSUS ALPHA
- (B) XCP/L VERSUS ALPHA
- (C) XCP/L ALPHA = 10 and CDMIN VERSUS MACH
- (D) DCLM/DSPBRK VERSUS ALPHA

NOMENCLATURE General

SYMBOL	SADSAC SYMBOL	DEFINITION
9		speed of sound; m/sec, ft/sec
c_{Γ}	CP	pressure coefficient; (p _l - p _w)/q
M	MACH	Mach number; V/a
p		pressure; N/m ² , psf
q	Q(PSF)	tunnel free stream dynamic pressure, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
v		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
Ψ	PCI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
P		mass density; kg/m ³ , slugs/ft ³
•		Reference & C.G. Definitions
Ab .		base area; m ² , ft ²
b	BREF	orbiter wing span; lateral reference length
C • £5 •		center of gravity
$oldsymbol{\ell}_{ ilde{C}}$	LREF	M.A.C. longitudinal reference length, in
;	SREF	orbiter wing area reference area; ft ²
	MRP	moment reference point, in orbiter coordinate system
	XMRP	moment, reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z sxic
CUECCRI	Palic:	
t)		heate Toch I
4 (5		static conditions
t oo		total conditions free stream

NOMENCLATURE (Continued) Body-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
$c_{ m N}$	CIN	normal-force coefficient; normal force
C _A	CA	exial-force coefficient; exial force
$c_{\mathbf{Y}}$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$^{\mathrm{C}_{A_{b}}}$	CAB	base-force coefficient; $\frac{\text{base force}}{q^S}$
		$-A_b(p_b - p_{\infty})/qS$
$^{\text{C}}\!A_{\mathbf{f}}$	CAF	forebody axial force coefficient, c_A - c_{A_b}
C _m	CLM	pitching-moment coefficient; pitching moment qSIREF
$C_{\mathbf{n}}$	CYN	yawing-moment coefficient; yawing moment qSb
c1	CBL	rolling-moment coefficient; rolling moment qSb
•		Stability-Axis System
$c_{\mathbf{L}}$	CL	lift coefficient; $\frac{\text{lift}}{\text{qS}}$
c_{D}	CD	drag coefficient; <u>drag</u> qS
c_{D_b}	CDB	base-drag coefficient; base drag
$\mathbf{c}_{\mathtt{D}_{\mathbf{f}}}$	CDF	fore: ly drag coefficient; CD - CDb
$^{\mathrm{C}}\mathbf{Y}$	CY	side-force coefficient; $\frac{\text{side force}}{\text{qS}}$
C_{m}	CIM	pitching-moment coefficient; pitching moment qs/REF
c_n	CLN	yawing-moment coefficient; yawing moment qSb
c 1	CSL	rolling-moment coefficient; rolling moment
L/ D	L/D	lift-to-drag ratio; $c_{ m L}/c_{ m D}$

NOMENCLATURE (Continued) Additions to Standard List

Symbol	SADSAC Symbol	Definition
₽B		orbiter body length
Χ _O		orbiter longitudinal station, in
Yo		orbiter spanwise station, in
Z _o		orbiter waterline, in
Sa.	AILRON	aileron deflection (δ_{e_L} - δ_{e_R})/2, degrees
⁸ e	ELEVON	elevon deflection ($\delta_{e_L} + \delta_{e_R}$)/2, degrees
$\delta_{\mathbf{r}}$	RUDDER	rudder deflection, degrees
6 BF	BDFLAP	body flap deflection, degrees
ьғ 8SB	SPDBRK	speedbrake deflection, degrees
ΛδSB	DSPBRK	incremental speedbrake deflection, degrees
XCP/lB	XCP/L	center of pressure location based on body length,
		$\frac{\chi_{C.G.}}{{}^{2}_{B}}$ - $\frac{CLM}{CN}$ $\frac{{}^{2}_{ref}}{{}^{2}_{B}}$
	'L ALPHA=10	center of pressure location based on body length
lB a=10		at an angle of attack of ten (10) degrees
C _{Dmin}	CDMIN	minimum drag coeffi cient
$\Delta c_{m}/\Delta \epsilon_{SB}$	DCLM/DSPB	RK pitching moment coefficient derivative with
, , , , SB		respect to speedbrake deflection
	CP1	orbiter cavity pressure coefficient
	CP2	orbiter centerline base pressure coefficient
	CP3	OMS base pressure coefficient
	CP4,5,6	clogged or blanked pressure taps, zero values are listed in source data.

CONFIGURATION INVESTIGATED

The model (67-0) was an 0.015-scale representation of the Space Shuttle Vehicle Orbiter Configuration 140A/B. This configuration was designated as 0_1 , which consisted of the following components:

B ₂₆	body (fuselage)
C9	canopy
E ₂₆	elevon
F ₇	bodyflap
M ₇	OMS pod
N ₇₂	OMS nozzle
R ₅	rudder
v ₈	vertical stabilizer
W116	wing

Model variables consisted of speedbrake deflections of 0° and 25° and bodyflap deflections of -11.7°, 0° and 16.3°. Numbers 100 and 120 grit were used on the vehicle. Transition strip locations are shown in Figure 2c.

Model component details are in Table III.

TEST FACILITY DESCRIPTION

NASA/Langley Research Center 8-Foot Transonic Pressure Tunnel is an air-medium facility capable of attaining continuously variable Mach numbers from 0.20 to 1.30. It is a single-return, closed-circuit tunnel having controlled stagnation temperature, total pressure, and dew-point temperature. The test section is 7.1 feet square. Reynolds numbers are variable from $0.30 \times 10^6/\text{foot}$ to $7.00 \times 10^6/\text{foot}$, depending on Mach number and tunnel total-pressure limitations. Models are supported in the test section by a sting-sector system, but wall-mounting is possible. Schlieren photography is available for flow and shock-wave studies.

DATA REDUCTION

Standard LaRC data reduction methods and the following constants were used to compute body and stability axis coefficients:

Symbol		Full Scale	Model Scale
SREF		2690.0 ft ²	0.6053 ft ²
^ℓ REF		474.31 in	7. 122 in
b _{REF}		936.6 8 in	14.050 in.
MRP	Xo	1076.7 in	16.151 in
	Yo	0.0 in	0.0 in
	$Z_{\mathbf{o}}$	375.0 in	5.625 in

TABLE I

ST : LRC 8'TPT-68	36 (OA106)		DATE : 17 DEC 73
	TEST CON	NDITIONS	
MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (PSF)	STAGNATION TEMPERATUR (degrees Fahrenheit)
1 20	4.22 x 10 ⁶ /ft	881	120
0.98	4.10 x 10 ⁶ /ft	770	120
0.95	4.06 x 10 ⁶ /ft	749	120
0.90	3.98 x 10 ⁶ /ft	710	120
0.85	3.89 x 10 ⁶ /ft	669	120
0.80	3.78 x 10 ⁶ /ft	623	120
0.70	3.51 x 10 ⁶ /ft	523	120
0.60	3.17 x 10 ⁶ /ft	418	120
0.35	2.05 x 10 ⁶ /ft	167	120
	·		
BALANCE UTILIZED: _	LRC #840	······································	
	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	800 lb	± 0.5%	
ŞĒ	250 lb	± 0.5%	
AF	125 1b	± 0.5%	
PM	1600 in-1b	± 0.5%	
RM	500 in-1b	± 0.5%	
YM	500 in-1b	± 0.5%	
COMMENTS:			
	•		

TABLE II.

	٦							TE	ST	RUN	NU	MBER	5	 						>	
73	(E)	ď	e	22		37									_					16. P.A.A. 100 AR 12)	
110EC7	VARIAB	2.1860	///		32 31	383					-				-			-	- '	N. Z.	
711	PENOEN	_		24																1/1/4/2.1/1.	
DATE:	ATE INDE	360060	8/	25	33	8						-				- +		_	_		911
> -	OR ALTERNATE INDEPENDENT VARIABLE)	8008	19	27 26	74	40				-								-	-	126, C9	18:50
DATA SET/RUN NUMBER COLLATION SUMMARY	-	035 0.600.700.800.85	-	23 2	-	4			,	-										2/2/	60
ATION	MACH NUMBERS	0.600	20			4										,					2,02,8
R COLL	L	us 035		 	-	4	1			-							ر	_	-	14. L.	471612
NUMBE	UES NO.			_	9	↓	-											=		37 06FFICEN	0,12
ET/RUN	PARAMETERS/VALUES	SAFISE	0	-	7	-	. L				-									1/2	
DATA S	PARAME	5.00	50	0	1,,	30	3				-		-	-	-					25 1GYN,	2.0
	CHUS	8			_				-	+										-	-
899		ATION															,			M. K.	& H . C . C . C . C . C . C . C . C . C .
141		CONFIGURATION	8	9	3	3/6	E													13 MJ2111	8 G: 7;
18 DX	-			2 5	200		74	+		-	-			-		-				, 10A.	a oR β SCHEDULES
TST:LKC 8/72T		DATA SET	100	Kar Co	2020	222	KQY 004													, CM	SC.

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - (B26)		
GENERAL DESCRIPTION: Orbiter Fuselage Config	uration 140 A/B	
NOTE: B ₂₆ identical to B ₂₄ except underside	of fuselage refa	ired to
accept W ₁₁₆ .		
Model Scale = 0.015		
DRAWING NUMBER: VL70-000193 VL70-000140A		
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length (Body Fwd Sta $X_0 = 235$) - in.	1293.3	19.400
Max. Width (at $X_0 = 1520$) - in.	262.0	3.93
Max. Depth (at $X_0 = 1464$) - in.	250.0	3.75
Fineness Ratio	0.26357	0.26357
Area - ft ²		
Max. Cross-Sectional	340.88462	0.07670
Planform		
Wetted		
Base		

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT : Canopy (Cg)	·			
GENERAL DESCRIPTION Configurati	on 140 A/B Orbiter	Fuselage		
Model Scale = 0.015	Model Dra	wing No. SS-AO0147		
DRAWING NUMBER: VL70-000140A VL70-000143A		<u> </u>		
DIMENSIONS:	FULL SCALE	MODEL SCALE		
Length $(X_0=434.643 \text{ to } 670)$	235.357	3.530		
Mex Width (@ X ₀ =513.127)	152.412	2.286		
Max Depth (@ Xo=485.0)	25.000	0.375		
Fineness Ratio				
. Area		***************************************		
Max. Cross-Sectional				
Planform	-			
Wetted	Toriton and construction			
Base	•			

MODEL COMPONENT: ELEVON - (E26)		
GENERAL DESCRIPTION: Configuration 140 A/E	3 Orbiter Elevon	
NOTE: VL70-000200 data for (1) of (2)	sides. Identical t	o E ₂₅ except
airfoil thickness	•	
Model Scale = 0.015	Model Drawi	ngs No. SS-A00148
DRAWING NUMBER: VL70-000140 B		
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	223 5814	0.0503
Span (equivalent)	368.34	5.525
Inb'd equivalent chord	119.623	1.794
Outb'd equivalent chord	55.1922	0.828
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.056	-10.056
Hingeline	0.00	0.00
Area Moment (Normal to hinge line)	851.1502	0.00287

MODEL COMPONENT: Pody Flar -(F7)		
GENERAL DESCRIPTION: Configuration		
NOTE: Body flap has variable centerline	e deflection of +13.	75° and
-14.25° from null position. Him	e line located at X	(_o =1528.3,
$Z_{o} = 264.3$	Model Drawin	ng No. SS-A00147
Model Scale = 0.015 DRAWING NUMBER VL70-000140	DA, VI.70-000145	
DIMENSION:	FULL SCALE	MODEL SCALE
Length $(X_0=1520 \text{ to } X_0=1613)$ - IN.	93.000	1.395
Max Width - IN.	262.000	3.930
Max Depth ($X_0 = 1520$) - IN.	23.000	_ 0.345
Fineness Ratio Area - Ft ²		
Max Cross-Sectional		
Planform	_150.5250	0.0339
Wetted		

41.84722

0.00941

Base

MODEL DIMENSIONAL DATA

MODEL COMPONENT : OMS Pod (M7)		
GENERAL DESCRIPTION Configuration L	40 A/B Orbiter	OMS-Pod
Model Scale = 0.015	Model Drawing	No. 55-A00147
VL70-000140A DRAWING NUMBER: VL70-000145		· · · · · ·
DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta Xo=1233.0) -IN	327.000	4.905
Max Width (@ X ₀ =1450.0) - IN.	94.5	1.418
Max Depth (@ $X_0=1493.0$) - IN.	109.000	1.635
Fineness Ratio		
Area	•	
Max. Cross-Sectional		
Planform		
Wetted		
Base	•	

1.

MODEL COMPONENT: NOZZLES - (N72)			
GENERAL DESCRIPTION: Configuration	on 140 A/B Orbit	ter OMS Nozzle	
The Pitch Null was mounted at 30°	instead of 15°4	19' as shown on the li	nes control
_drawing.			
MODEL SCALE = 0.015		Model Draw	ing No. SS-A0014
DRAWING NO. VL70-000140A			
DIMENSIONS		DIII COALD	MODEL COALE
Me ch. No.		FULL SCALE	MODEL SCALE
PACII NO.	•	•	
Length ~ in.			
Gimbal Point to Exit Plan	e		·
Throat to Exit Plane			
Diameter~in.			
Exit			
Throat			
Inlet			
•		***************************************	
Area \sim ft ² .	·		
Exit			
Throat		-	
Gimbal Point (station)∼in.			
x		1510.0	22.77
ĭ		<u>+</u> 88.0	1.32
Z ,		492.0	7.38
Null Position ~ deg.		-	
Pitch		300-	- 30
Yew ·		12° 17'	12° 17'

MODEL COMPONENT: RUDDER - R5		
GENERAL DESCRIPTION: Configuration 140 A	/B Orbiter Rudder	
Model Scale = 0.015	Model Draw	ring No. SS-A00148
DRAWING NUMBER: VL70-000095,	<u>V</u> 170-000146A	
DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - FT ²	106.38	0.0239
Span (equivalent) - IN.	201.0	3.015
Inb'd equivalent chord	91.585	1.371
Outb'd equivalent chord	50.833	0.762
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees	•	•
Leading Edge	34.83	34.83
Tailing Edge	<u> 26.25</u>	26.25
Hingeline	34.83	34.83
Area Moment (Normal to hinge line) (Product of Area and Mean Chord)	FT ³ _526.13	0.00178

MODEL COMPONENT: VERTICAL - V 8			
GENERAL DESCRIPTION: Configuration 140 A/B Orbiter Vertical Tail			
No. Similar to V5 with radius	s on TE upper corner	and LE lower co	ner
where vertical meets fus			
		Model Drawing	No. SS-A00148
Model Scale = 0.015	VL70=000140A	noder making	
DRAWING NUMBER:	VL70-000146A		
DIMENSIONS:		FULL-SCALE	MODEL SCALE
TOTAL DATA	_	•	
Area (Theo) Ft ²		413.253	0.09298
Planform Span (Theo) In		315.720	4.73580
Aspect Ratio		1.675 0.507	0.507
Rate of Taper Taper Ratio	٠.	0.40399	0.40399
Sweep Back Angles, degree	es		
Leading Edge	1	45.00 25.947	45:00 25.947
Trailing Edge 0.25 Element Line		41.130	41.130
Chords:			
Root (Theo) WP		268,500 108,470	4.02750 1.62705
Tip (Theo) WP		199.80756	2.99711
Fus. Sta. of .25 MAC		1463.50	21.95250
W. P. of .25 MAC		635.522	9.53283
B. L. of .25 MAC Airfoil Section		0.00	0.00
Leading Wedge Angle	Deg	10.00	10.00
Trailing Wedge Angle	. Deg	14.920	11. 920
Leading Edge Radius Void Area		2.00	0.0300 0.00296
Blanketed Area		0.00	0.00

TABLE III. - Concluded.

MODEL COMPONENT: WING- (Wark)			
GENERAL DESCRIPTION: Configuration 140 A/B Orbiter			
NOTE: Identical to W114 except airfoil thickness.	Dihedral angle	is along	
trailing edge of wing.			
Model Scale = 0.015		ng No. SS-A00148	
TEST NO.	DWG. NO. VL70-		
DIMENSIONS:	FULL-SCALE	MODEL SCALE	
TOTAL DATA Area (Theo.) Ft ²			
Planform	2690.00 936.6816	0.6053	
Span (Theo In. Aspect Ratio	2.265	2.265	
Rate of Taper Taper Ratio	$\frac{1.177}{0.200}$	1.177 0.200	
Dihedral Angle, degrees(at Xo=1506.623,Yo=	3.500	3.500 0.500	
Incidence Angle, degrees 105, Zo= 282.75) Aerodynamic Twist, degrees	0.500 _+3.000	+3.000	
Sweep Back Angles, degrees Leading Edge	45.00	45.00	
Trailing Edge	-10.056 35.209	-10.056 35.209	
0.25 Element Line Chords:			
Root (Theo) B.P.O.O. Tip, (Theo) B.P.	689.2429 137.8486	2.068	
MAC	474.8117 1126.721	7.222	
Fus. Sta. of .25 MAC W.P. of .25 MAC	291.00	2.810	
B.L. of .25 MAC	187.33491		
EXPOSED DATA Area (Theo) Ft ²	1812.2205	0.408	
Span, (Theo) In. BP108 Aspect Ratio	736.6816	2.058	
Taper Ratio	0.2451	0.2451	
Chords Root BP108	570.6230	8.559	
Tip 1.00 <u>b</u>	137.8512 354.2376	5.314	
MAC Fus. Sta. of .25 MAC	1164.237	17.464	
W.P. of .25 MAC	292.00 239.67786	4.380 3.595	
Airfoil Section (Rockwell Mod NASA)			
$\begin{array}{c} XXXX-64 \\ Root b = 0.425 \end{array}$	0.113	0.113	
₹ Tip <u>b</u> = 1.00	0.12	0.12	
Data for (1) of (2) Sides			
Leading Edge Cuff 2 Planform Area Ft2	79.13389	0.0266	
Leading Edge Intersects Fus M. L. @ Sta Leading Edge Intersects Wing @ Sta	505,0 1084.5	7.575 15.053	
ee			

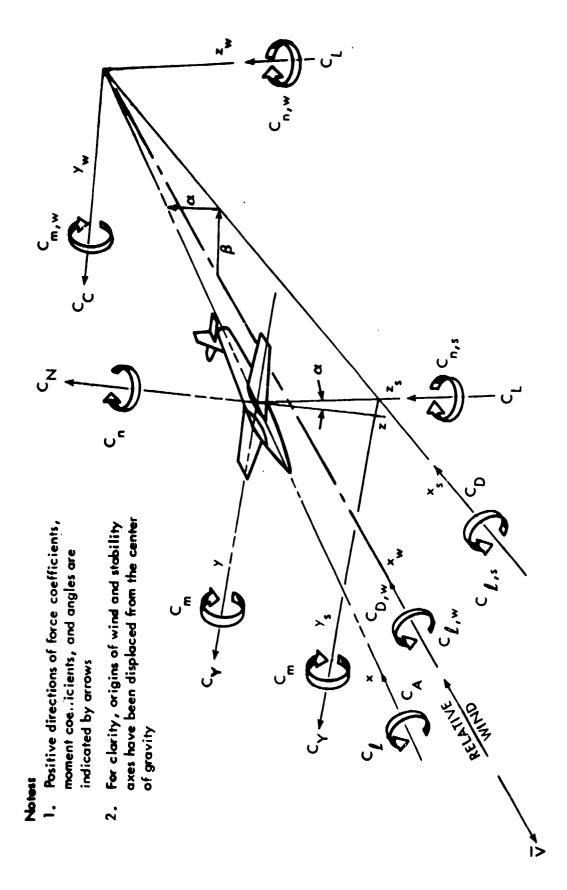
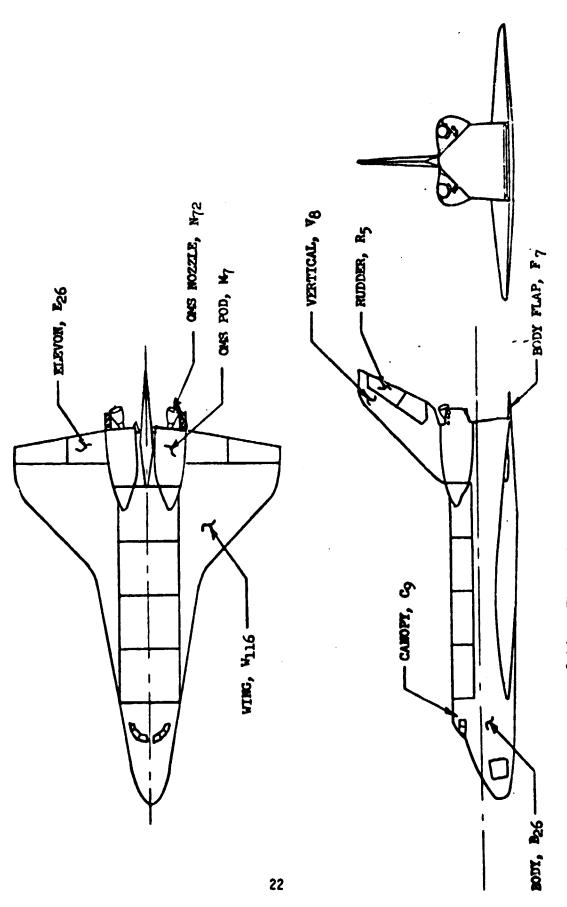
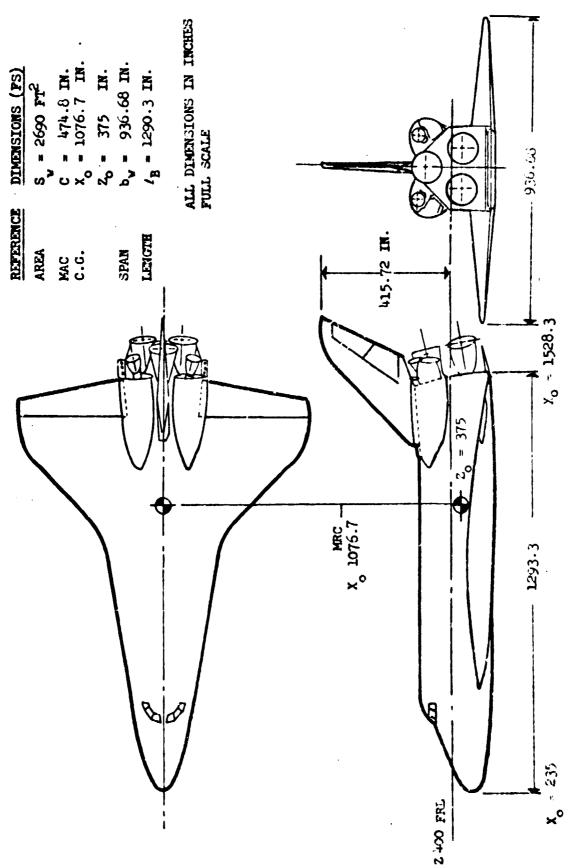


Figure 1. Axis Systems

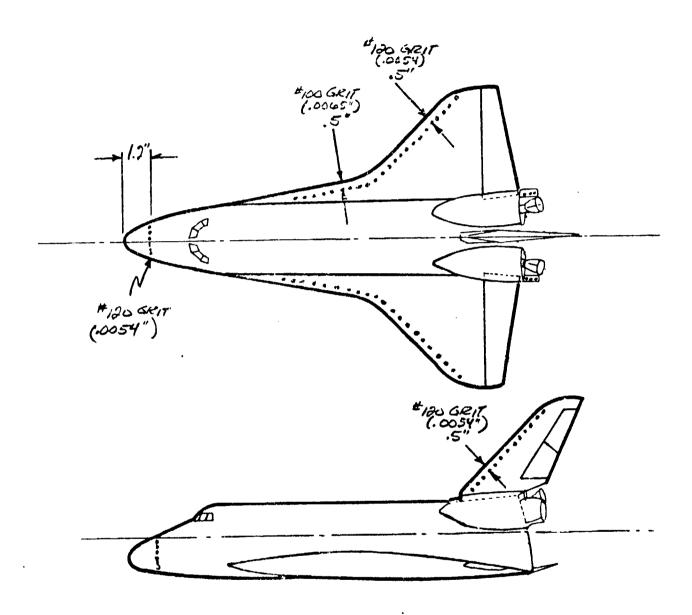


 a. Orbiter Three View Showing Component Nomenclature Figure 2. - Model Sketches.



SSV Orbiter Configuration 140 A/B General Dimensions و.

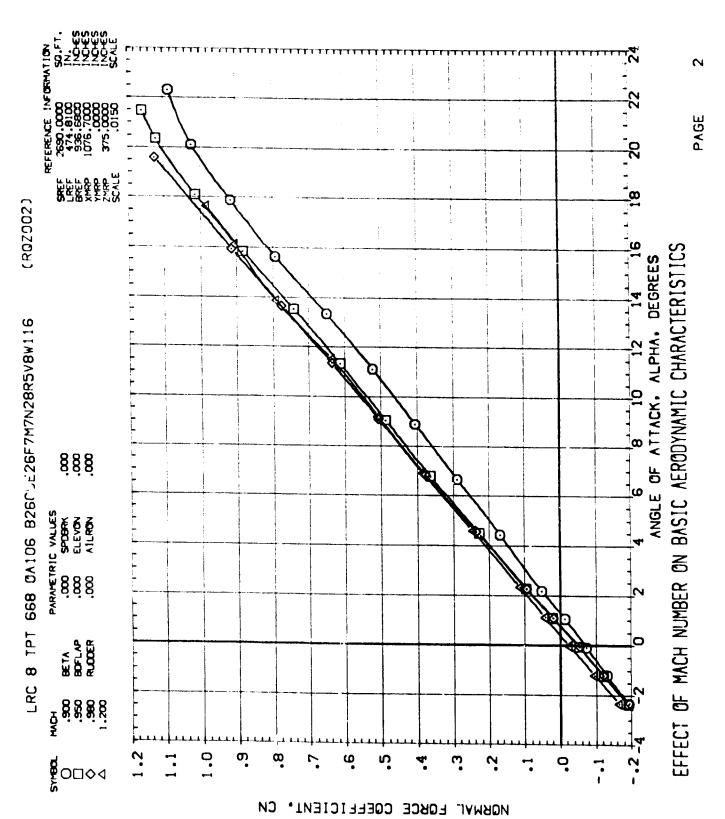
Figure 2. - Continued.



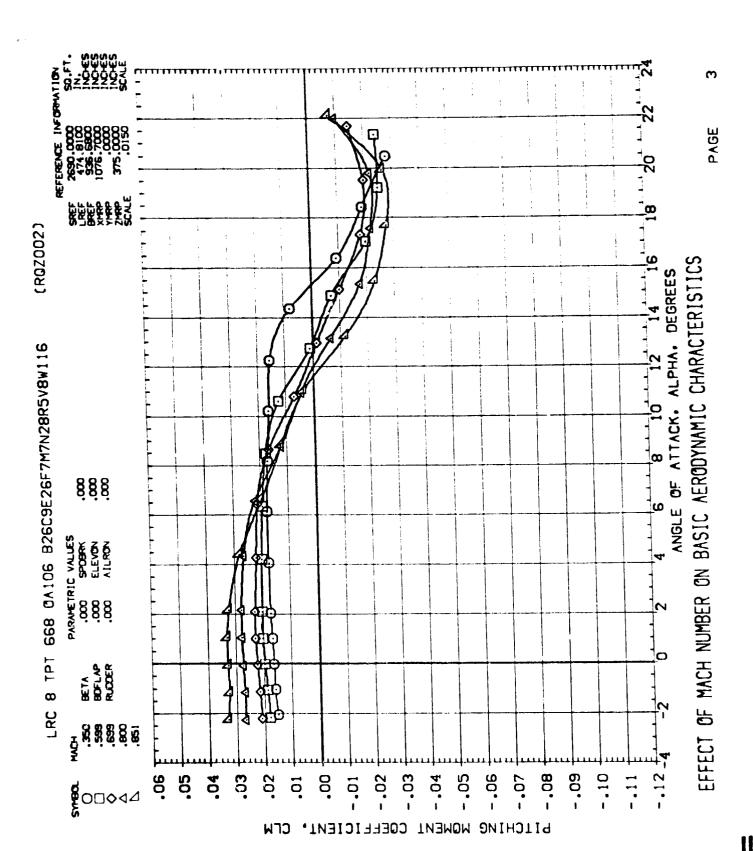
c. Boundary layer transition strip locationsFigure 2. - Concluded.

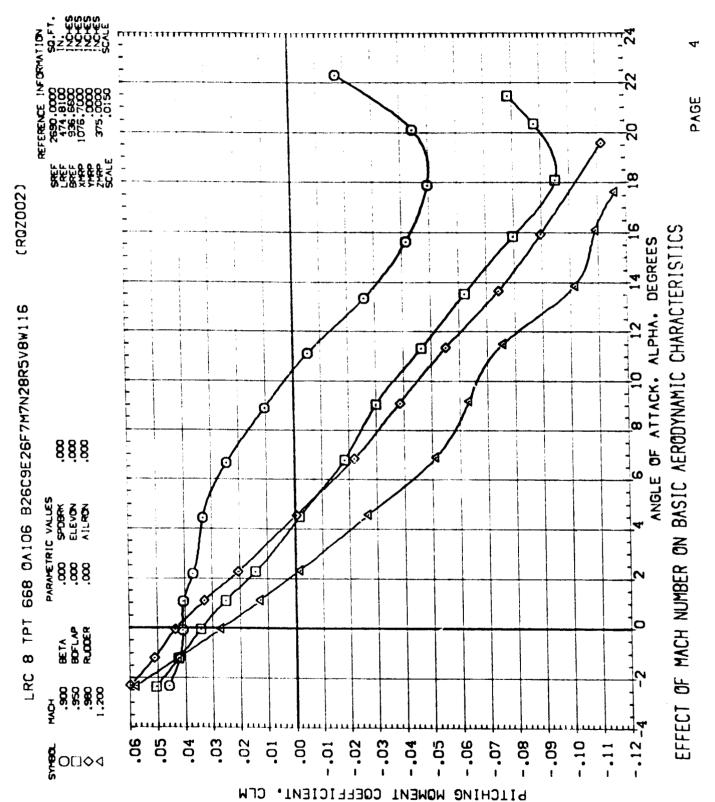
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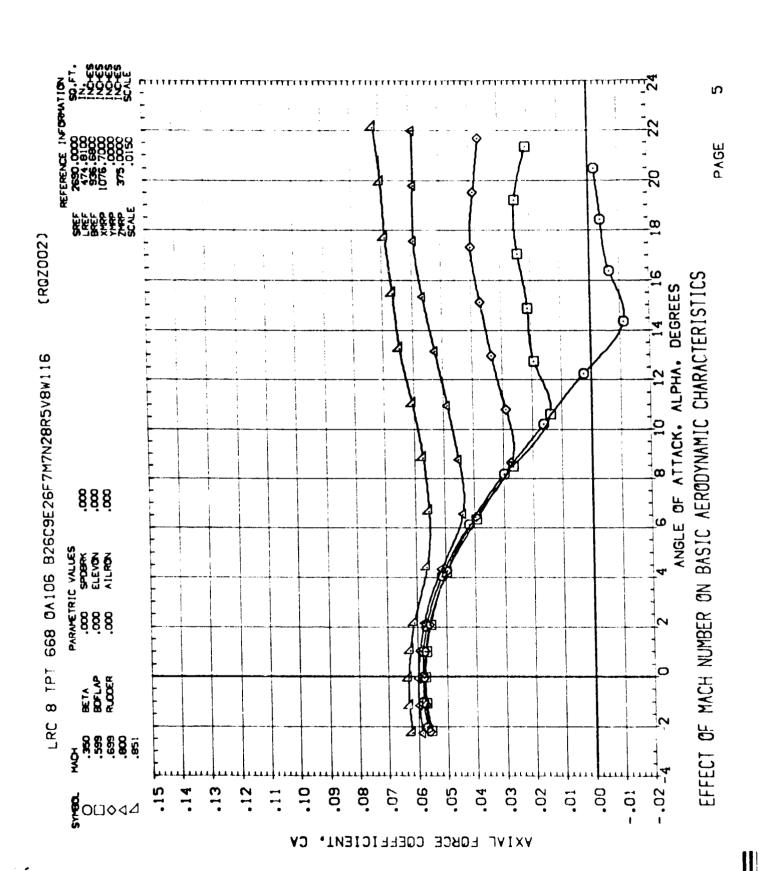


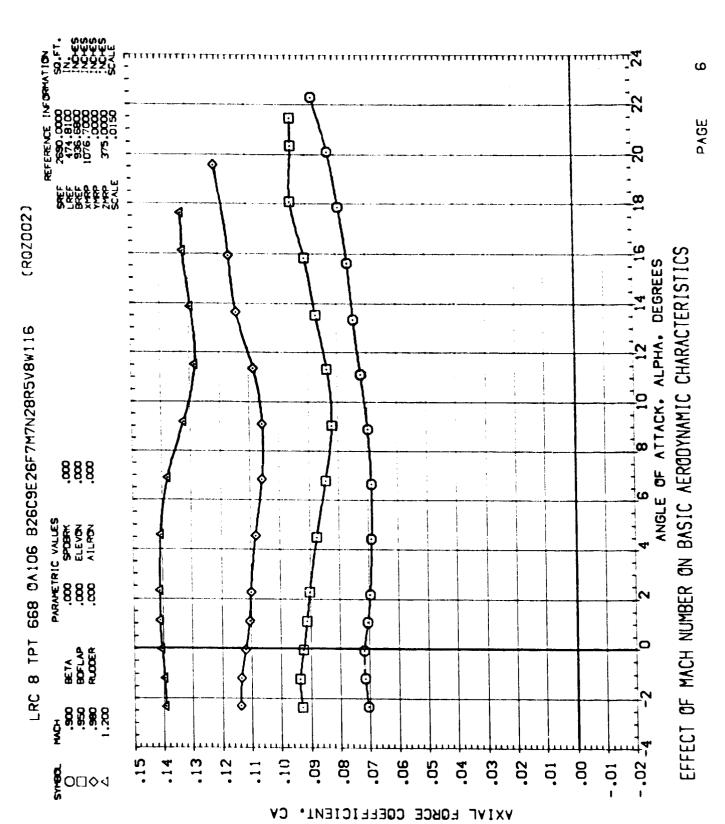




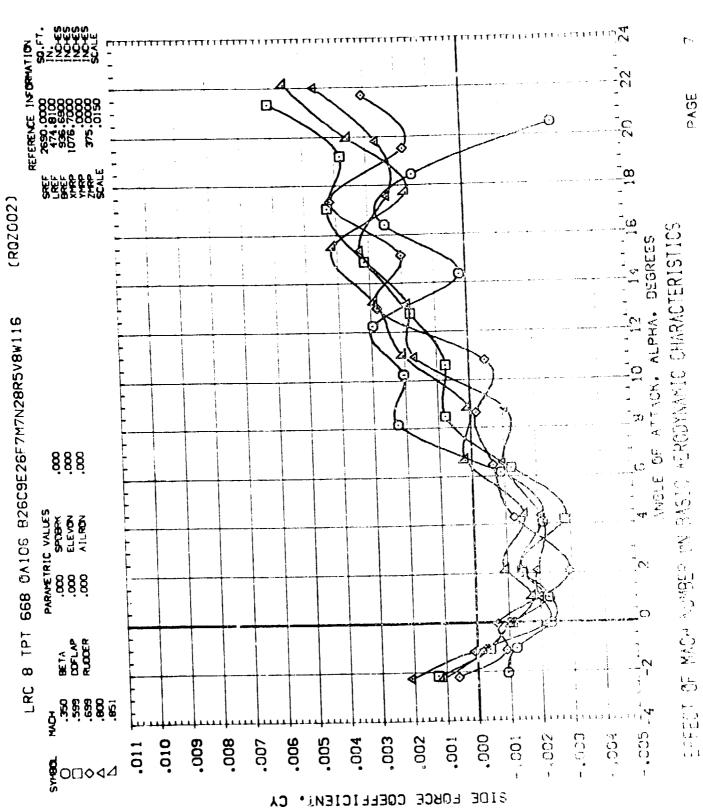






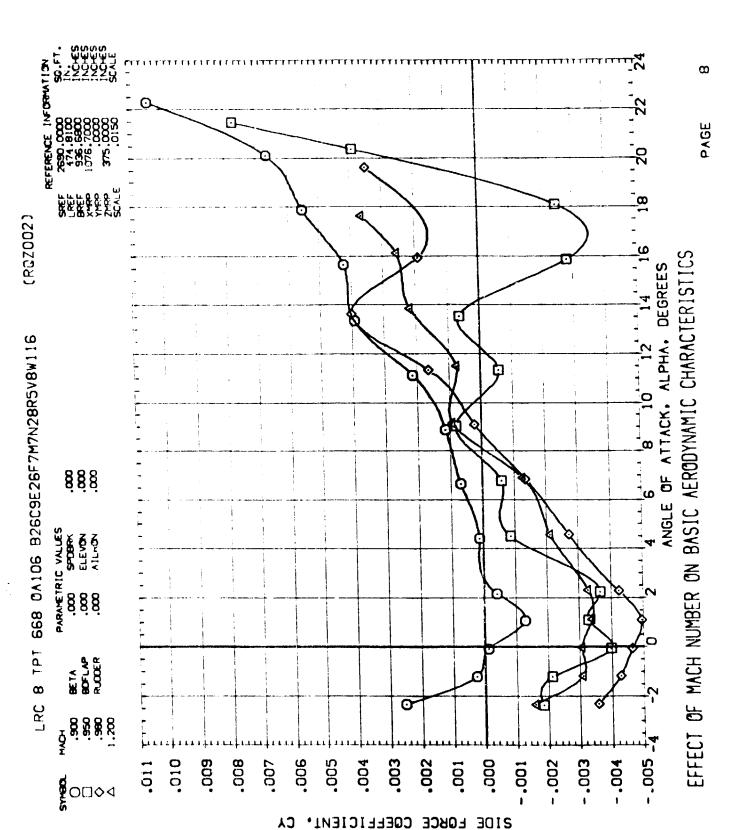




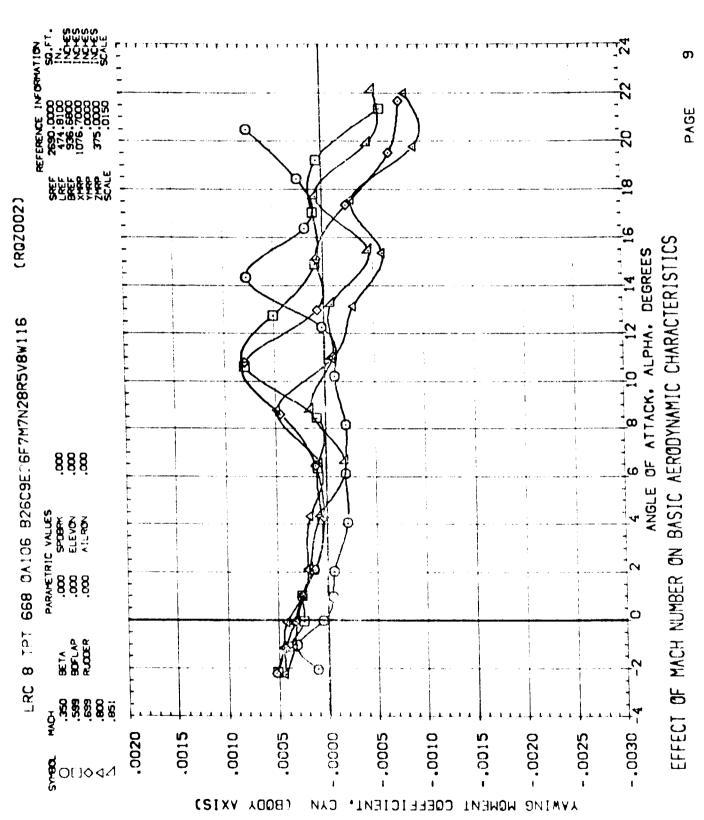


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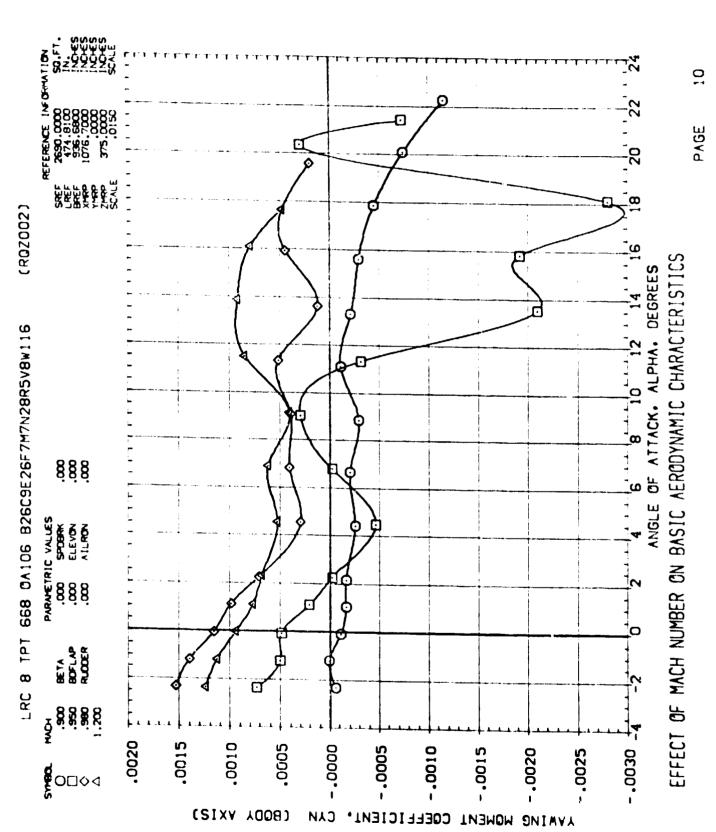
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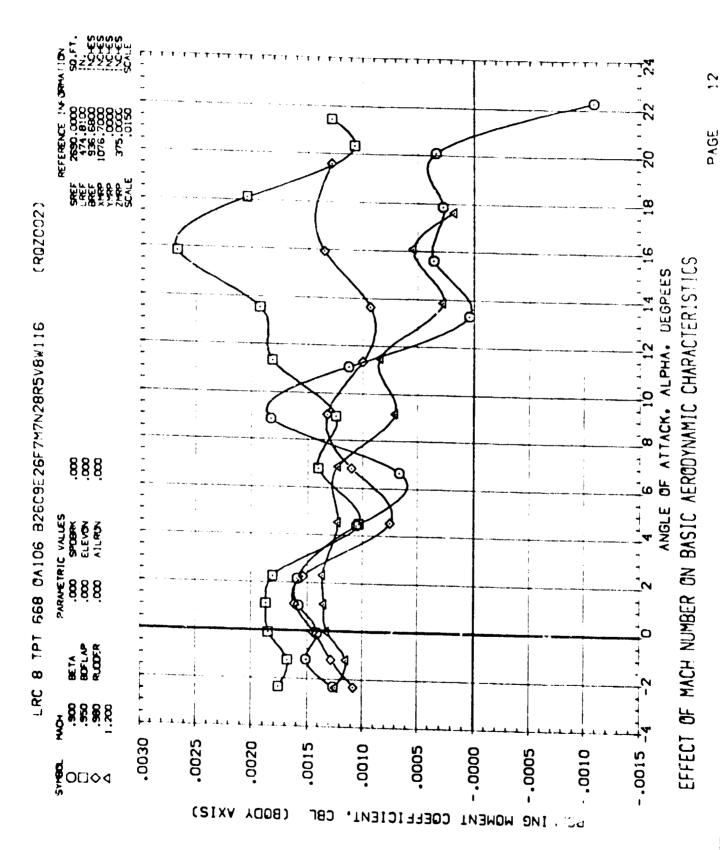




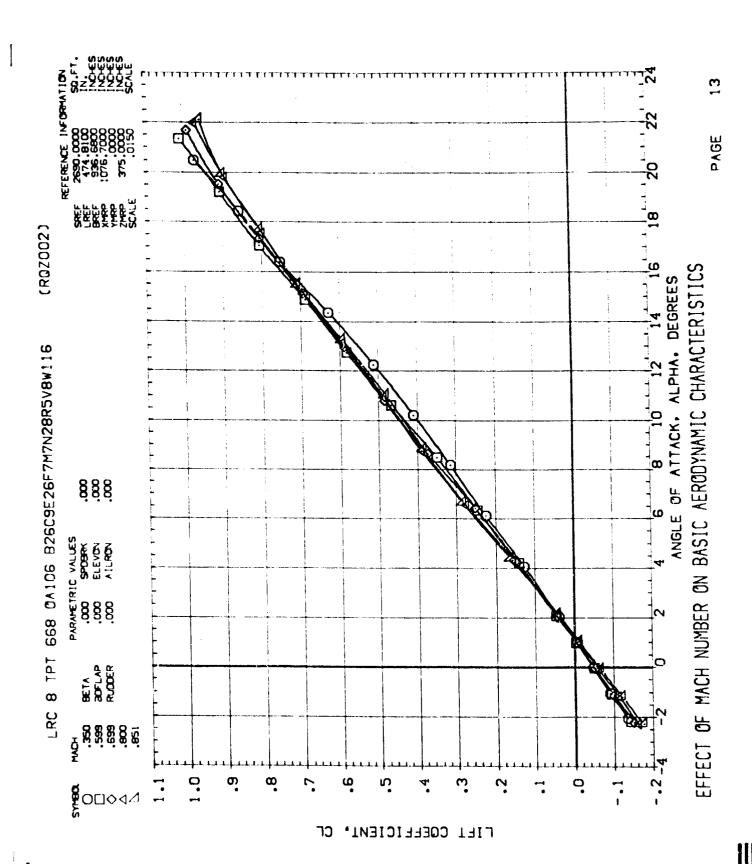


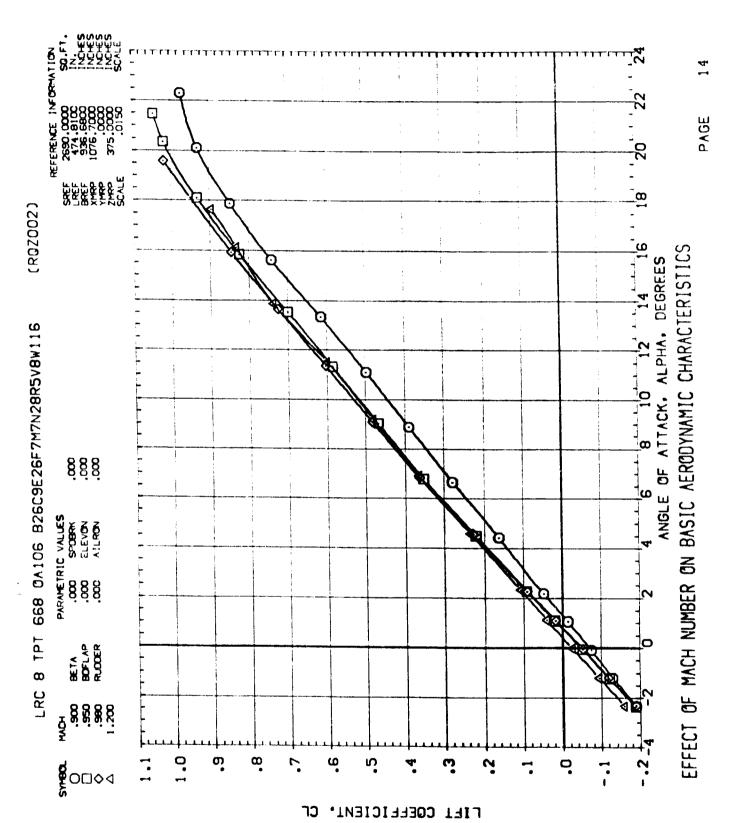




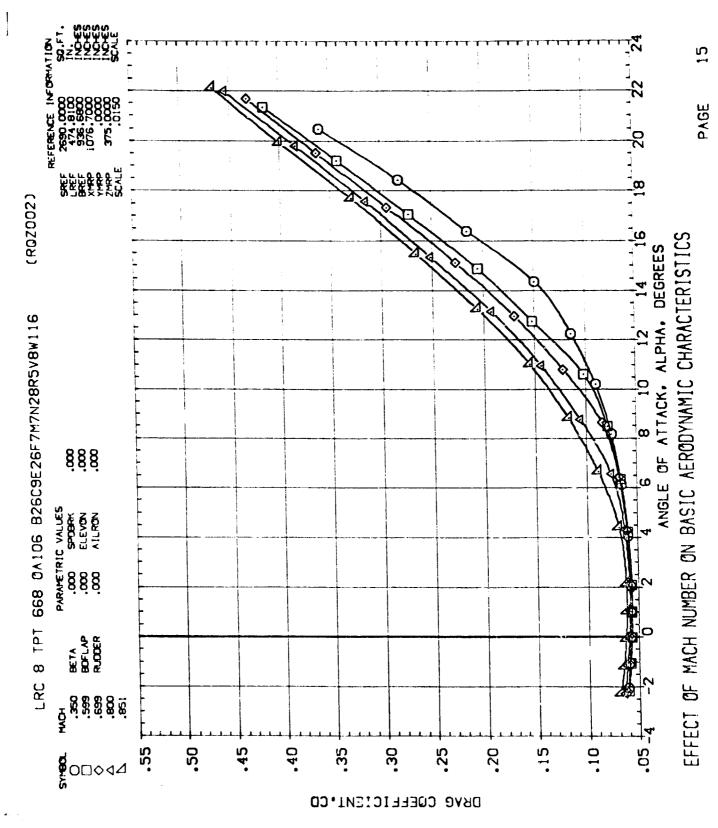


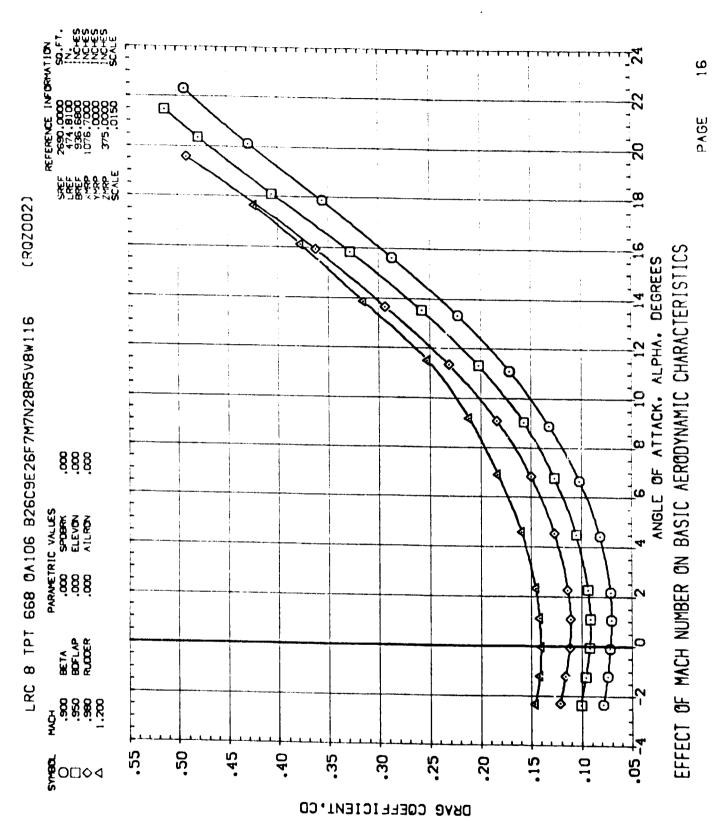


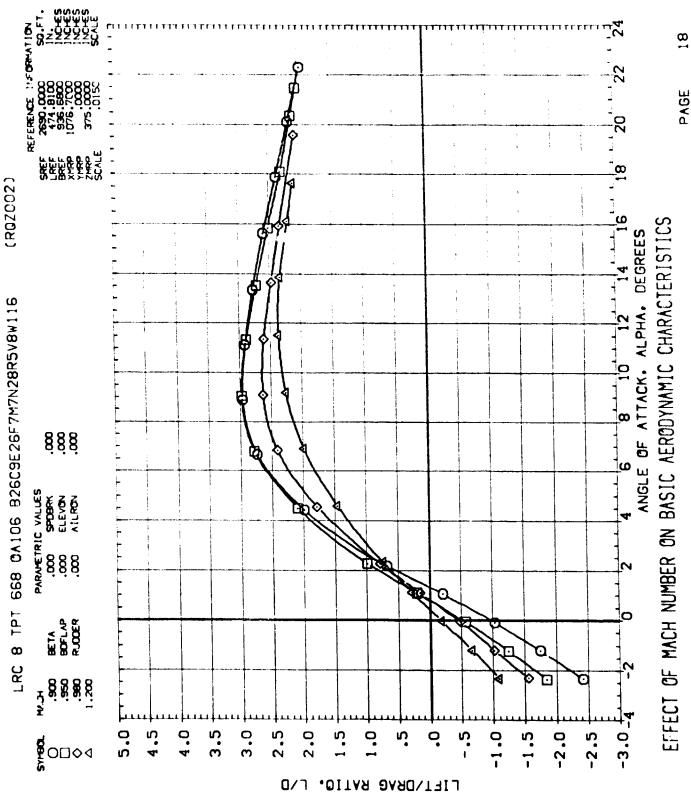




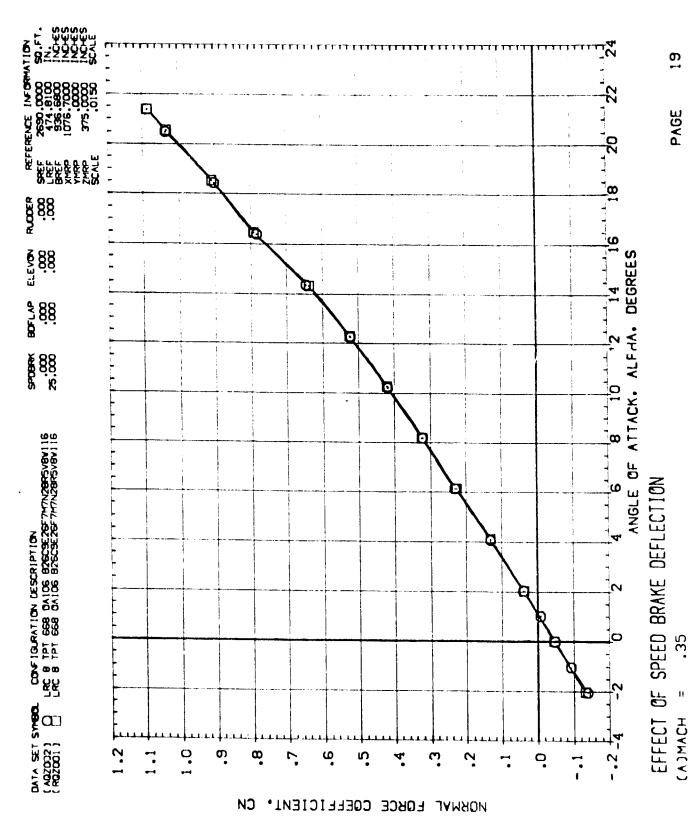




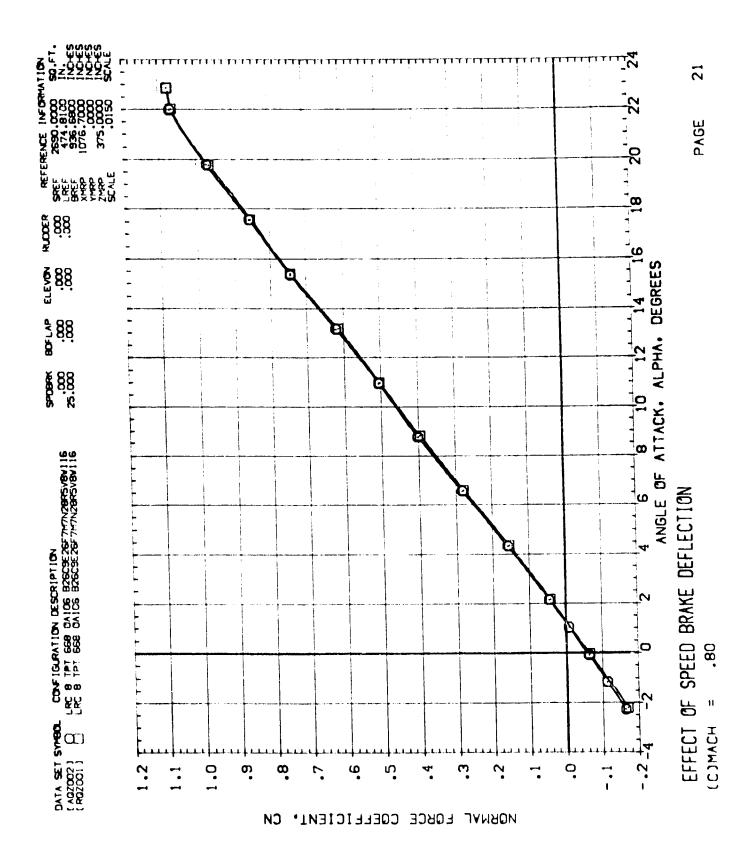


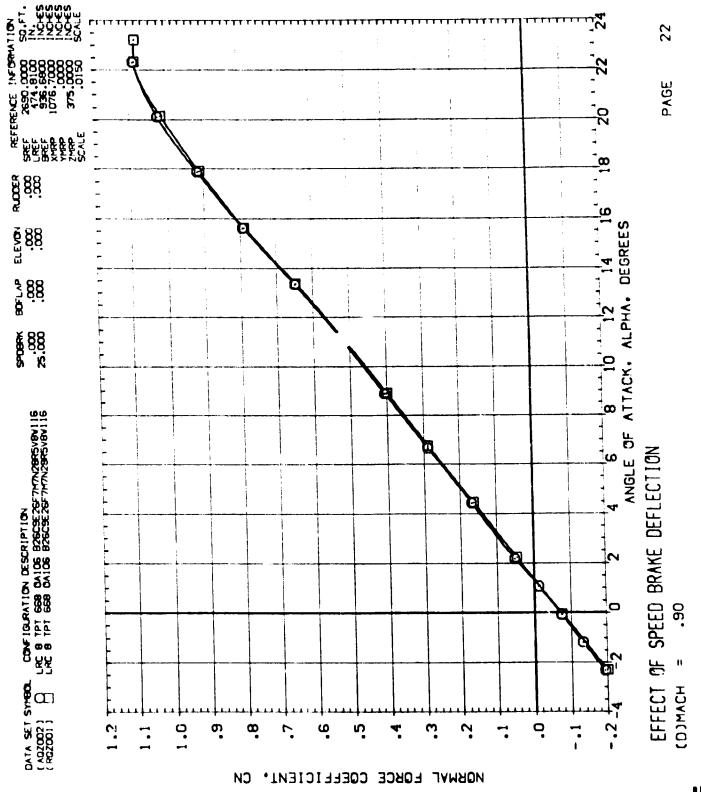


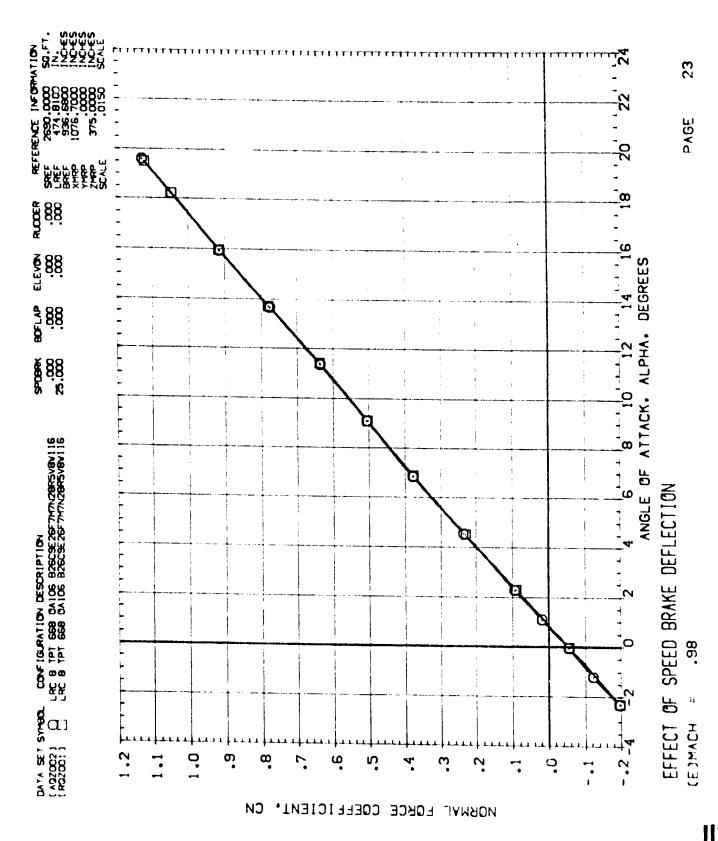


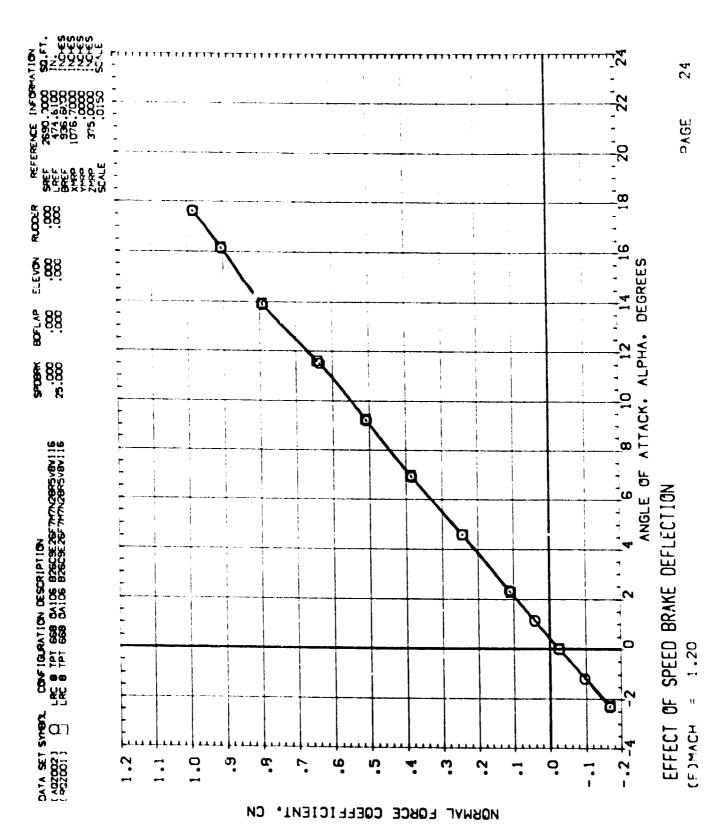


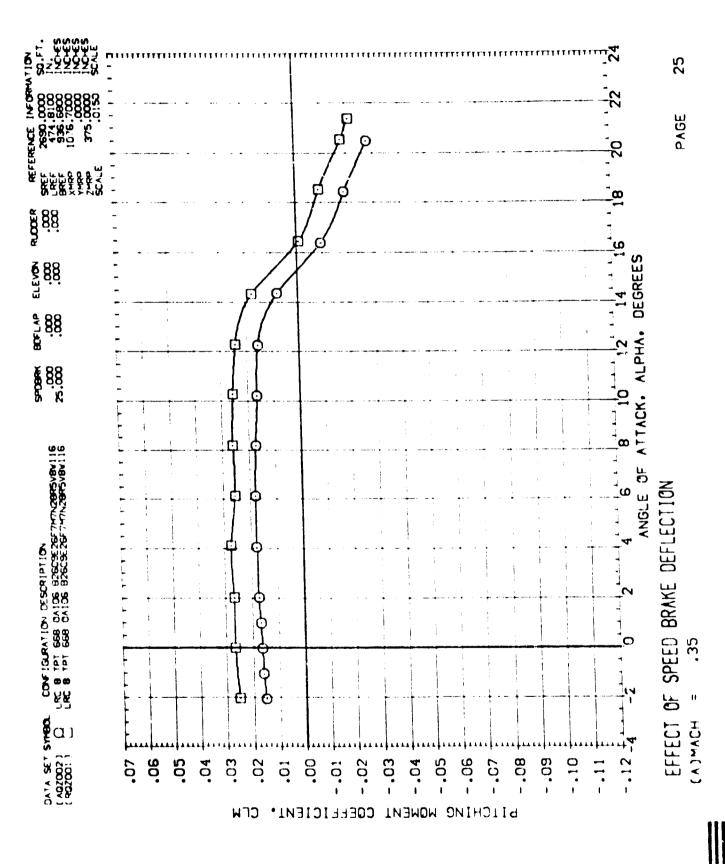


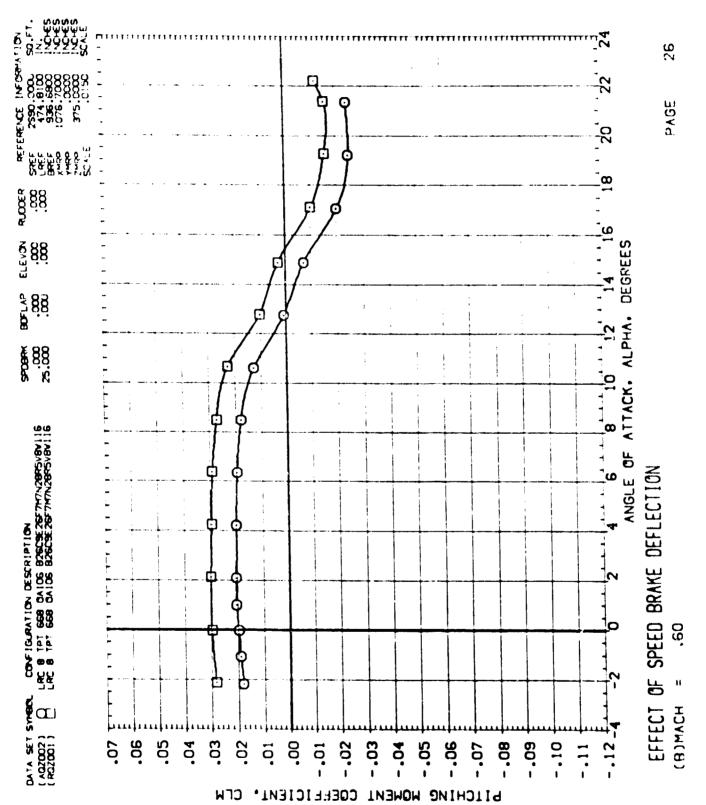


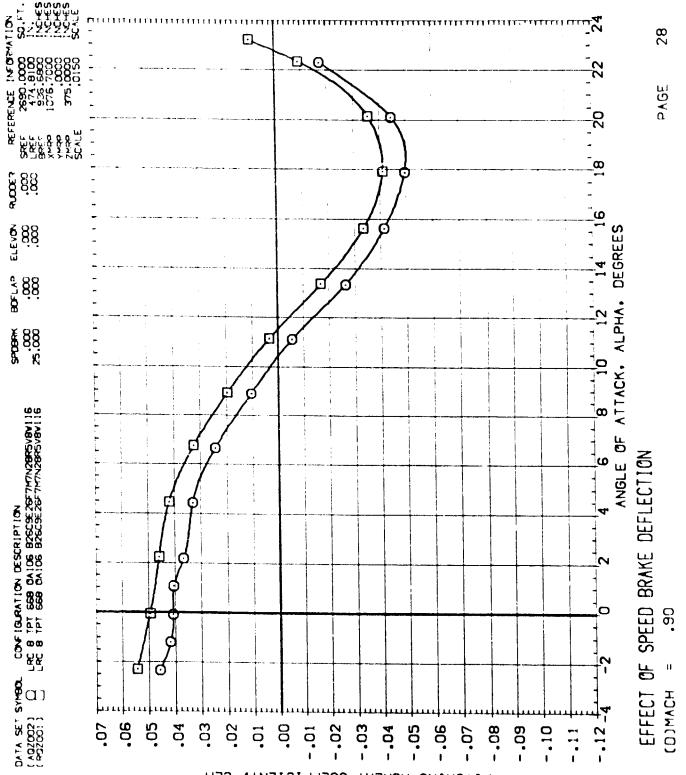










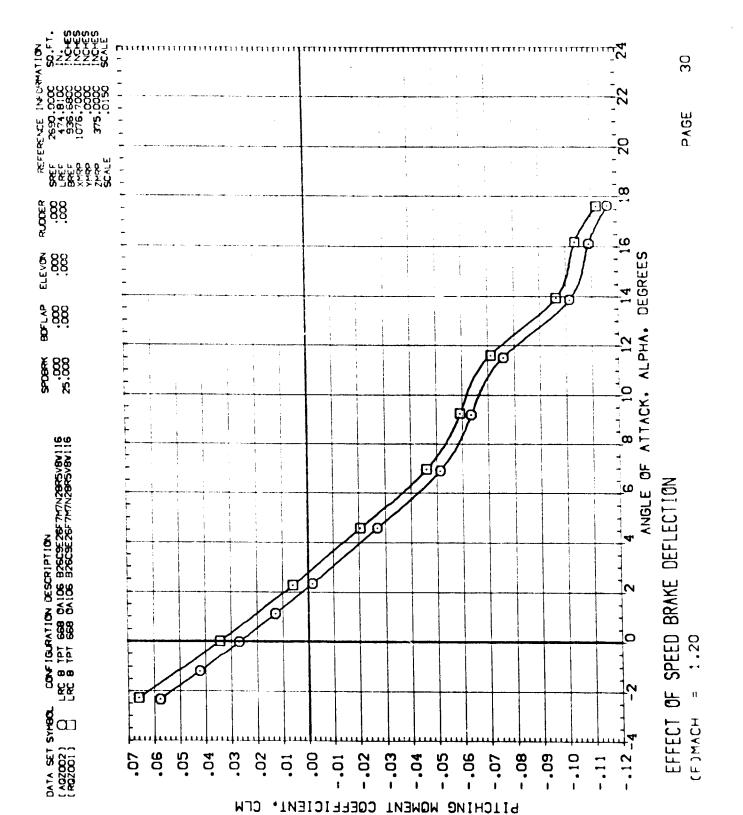


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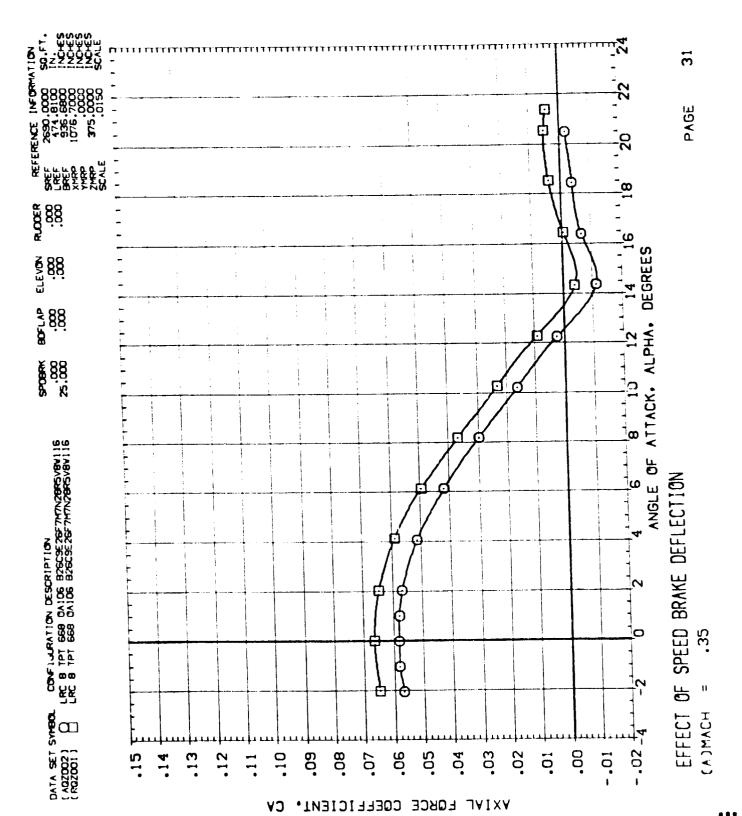
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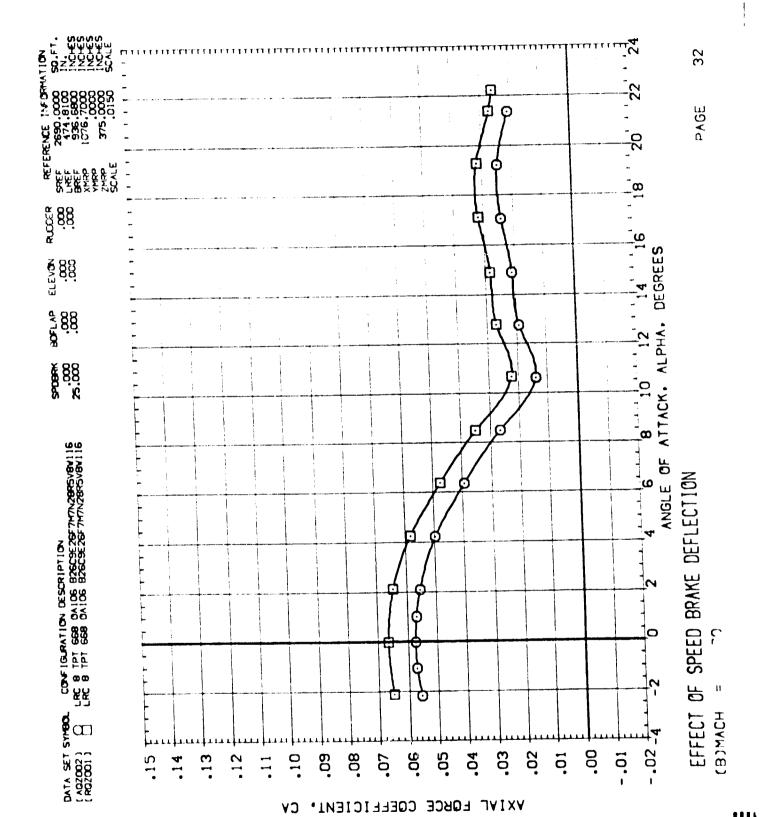
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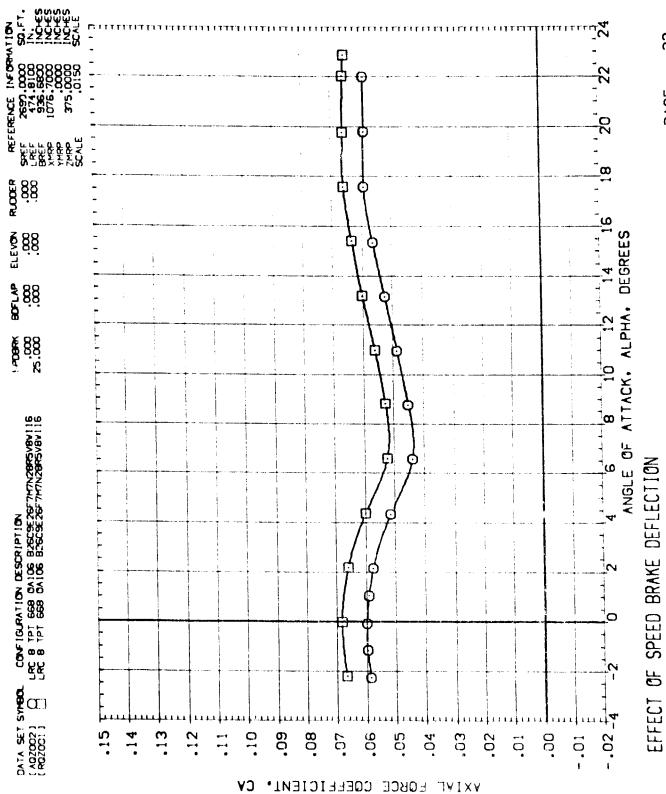


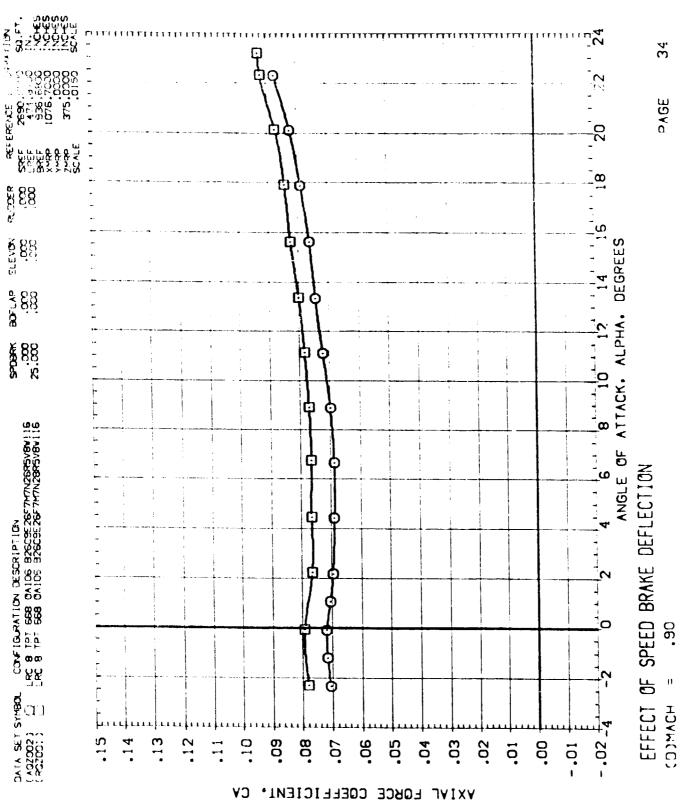


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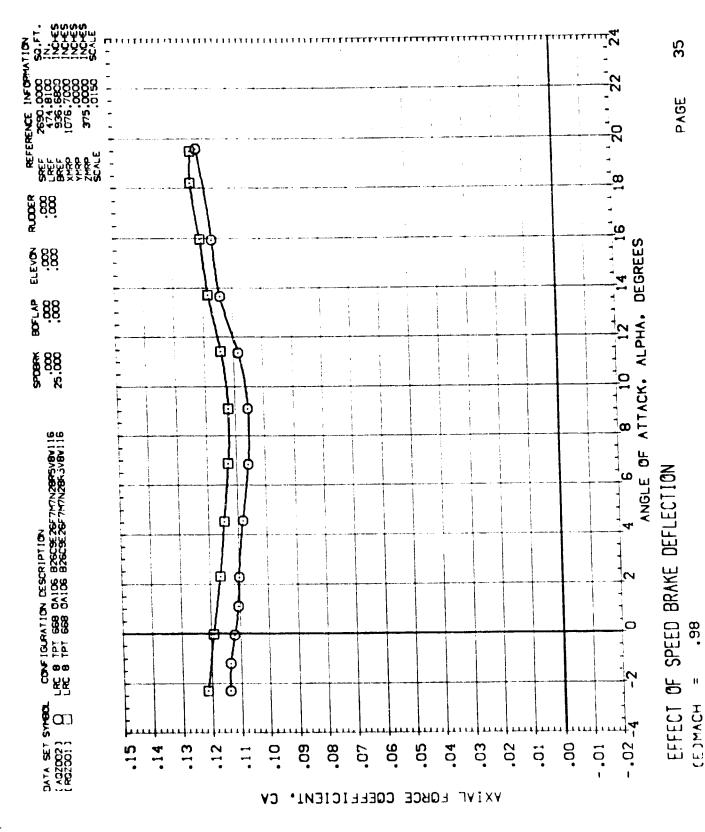
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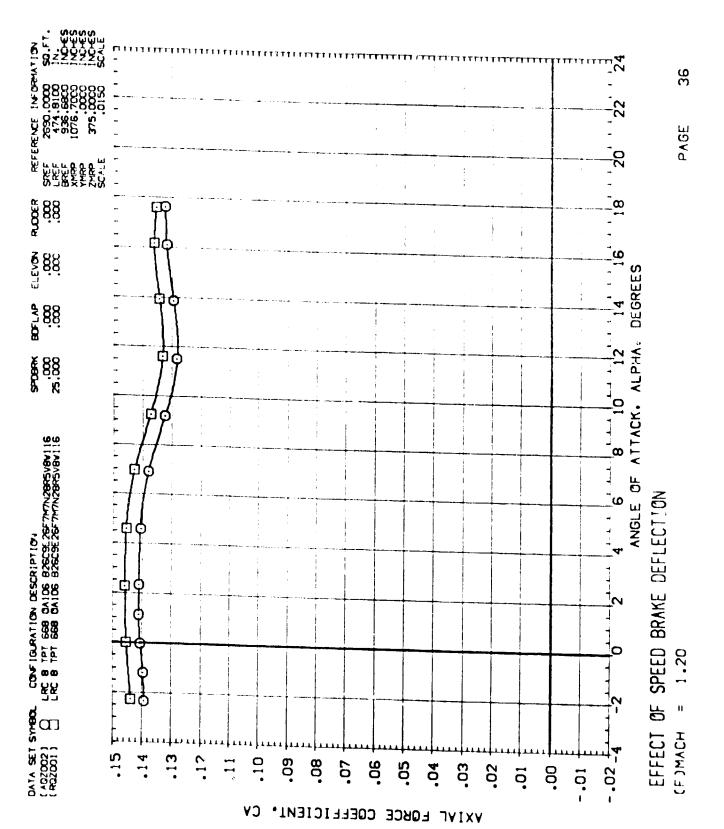
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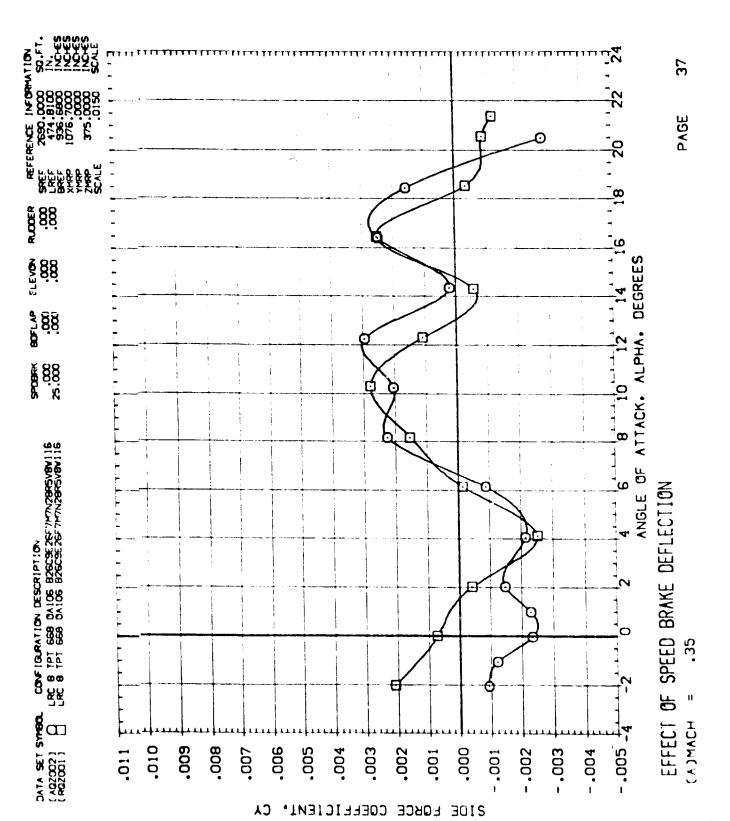


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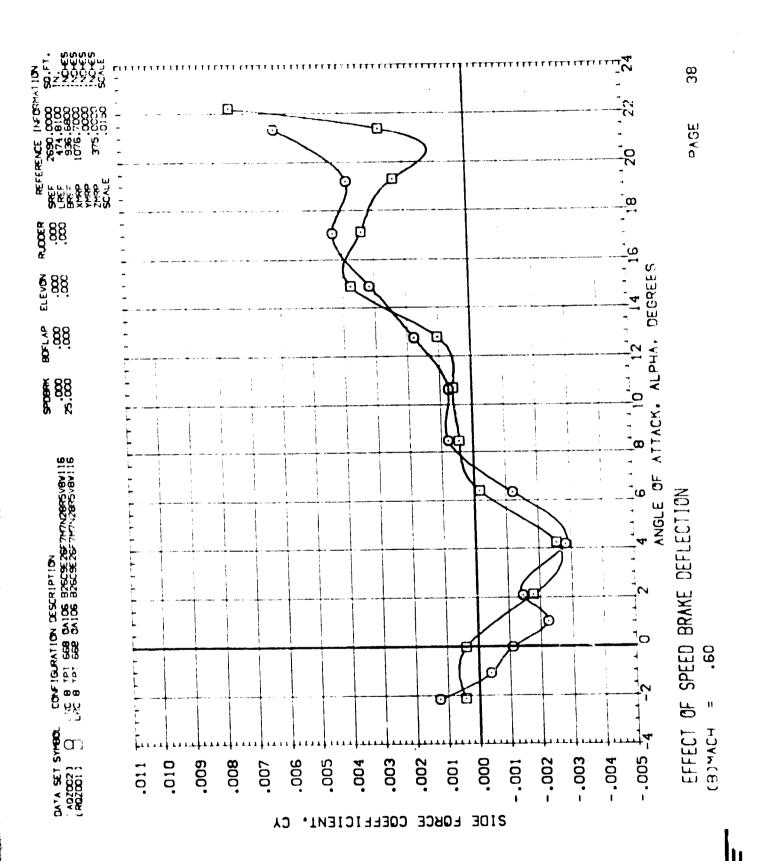


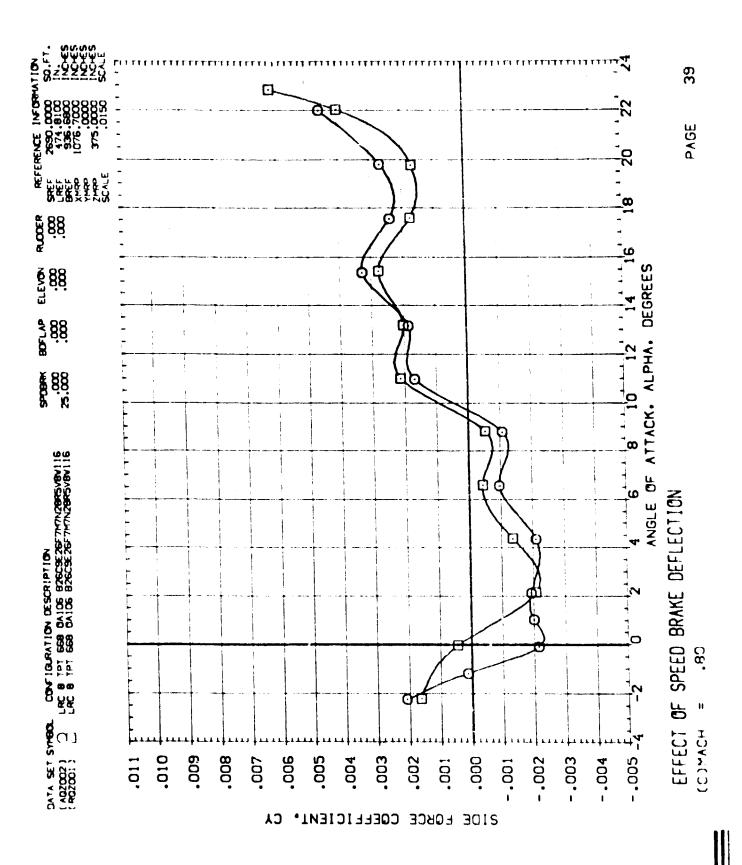


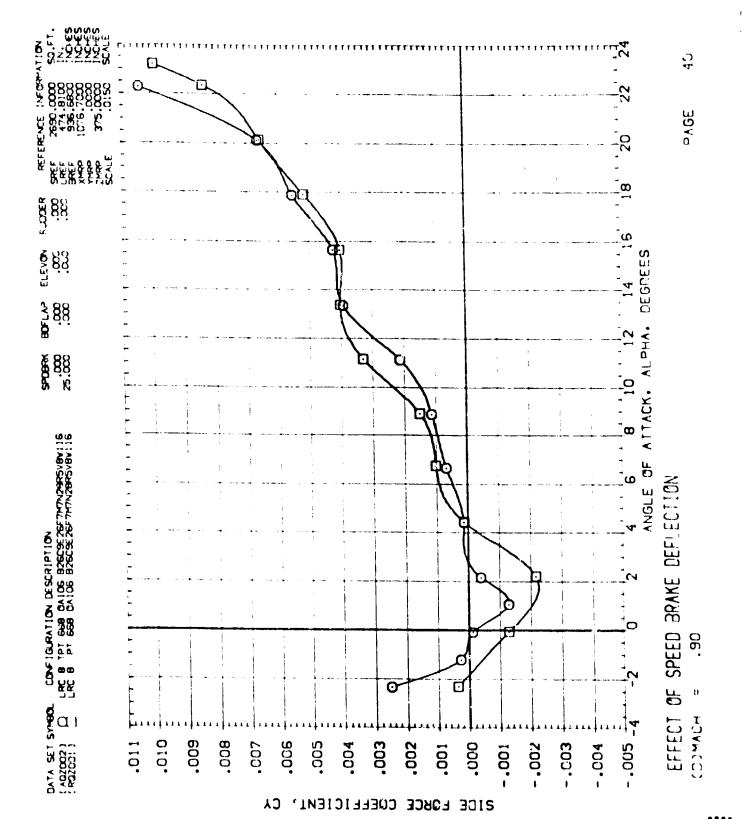


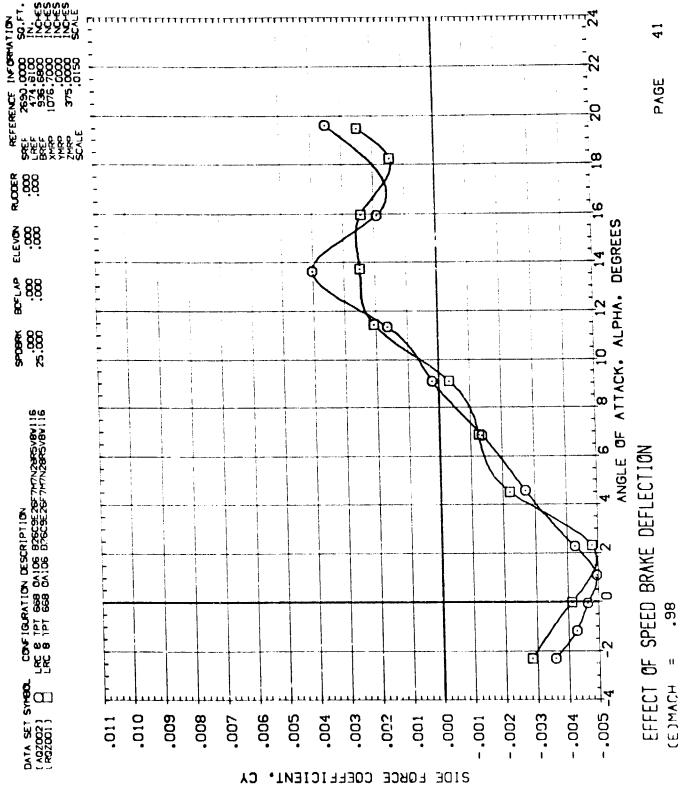


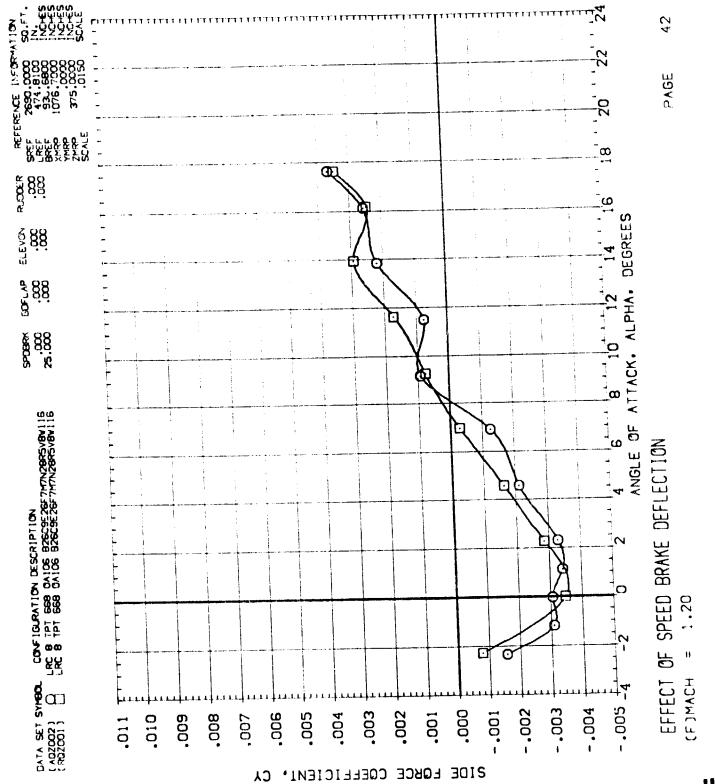








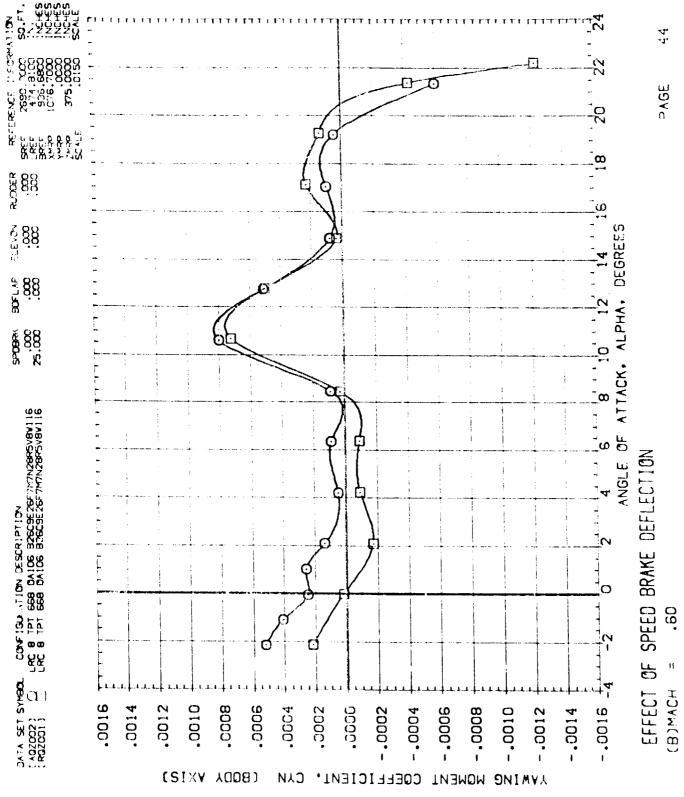


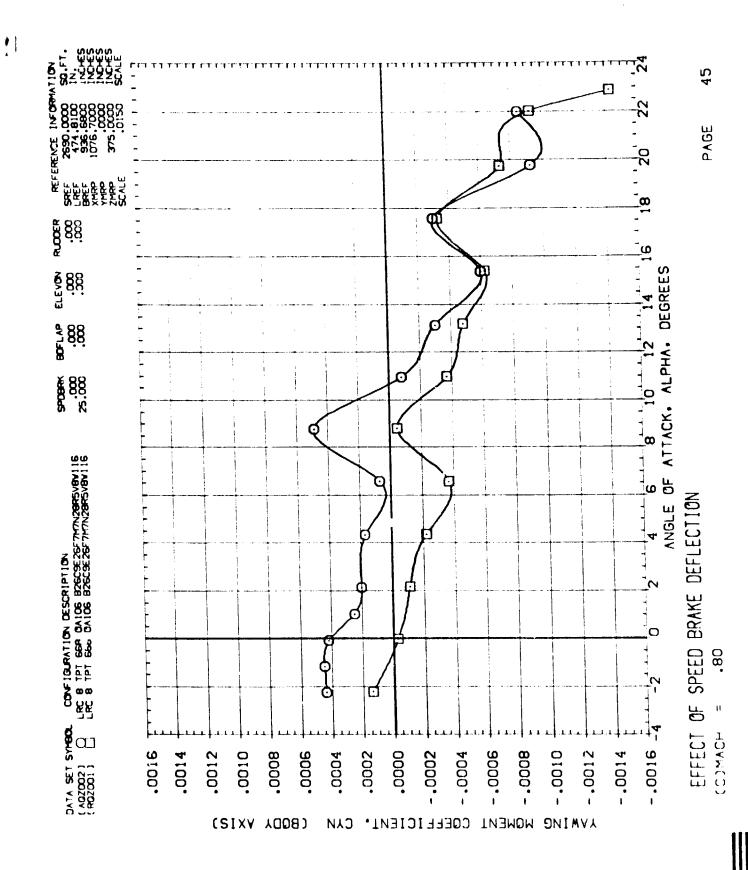


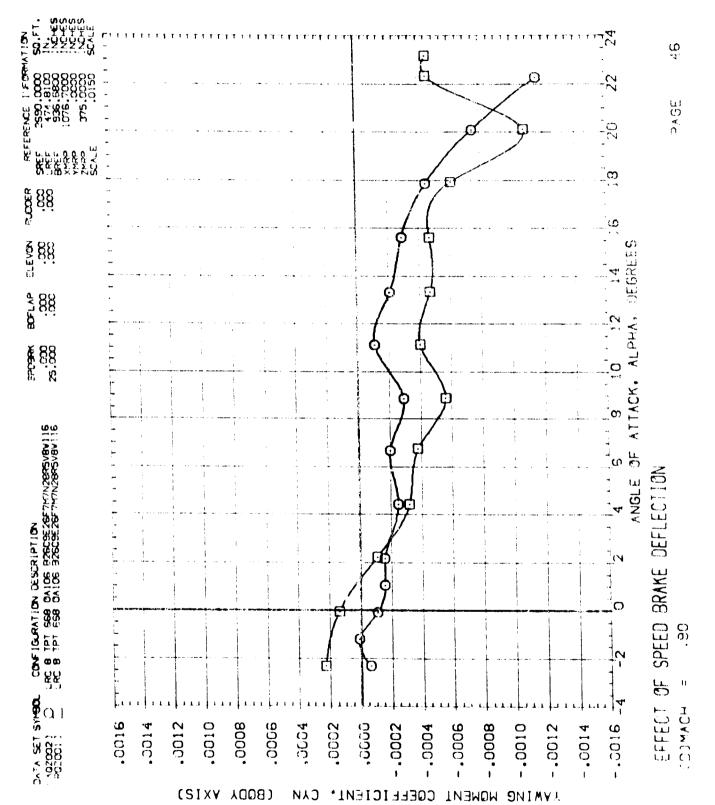


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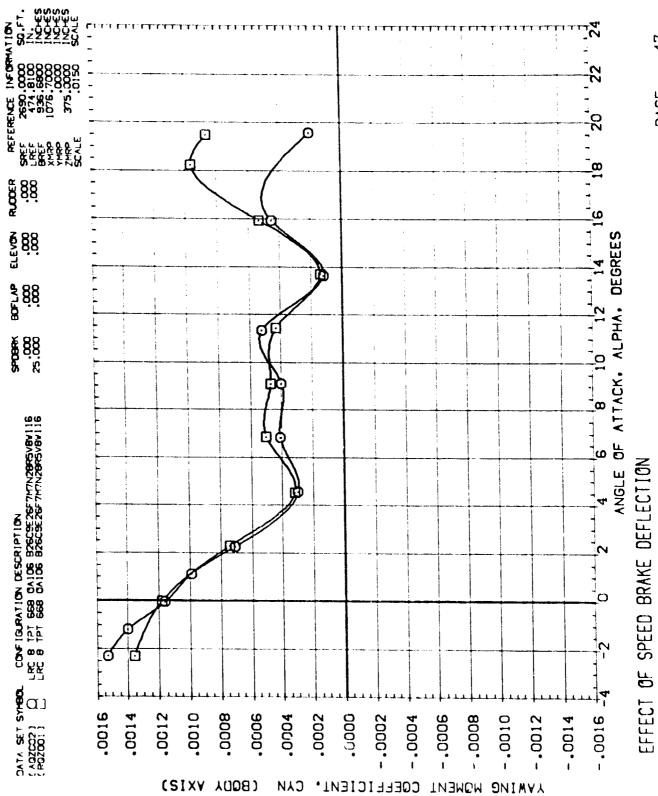
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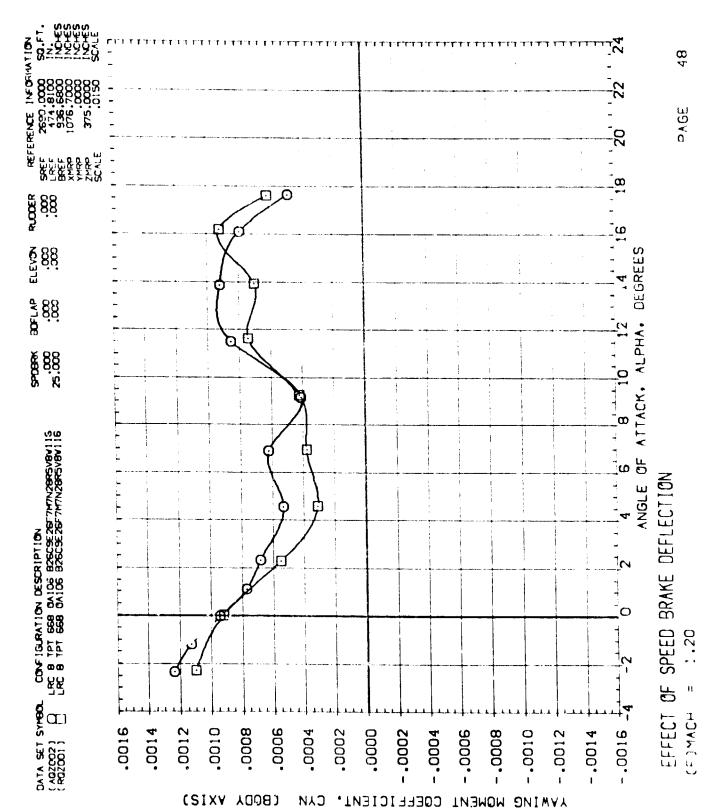






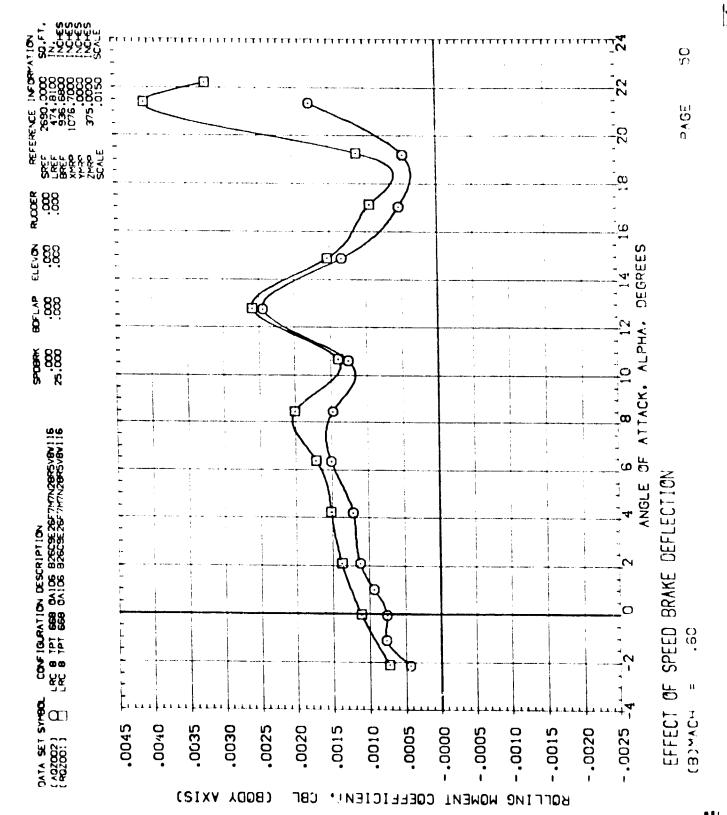
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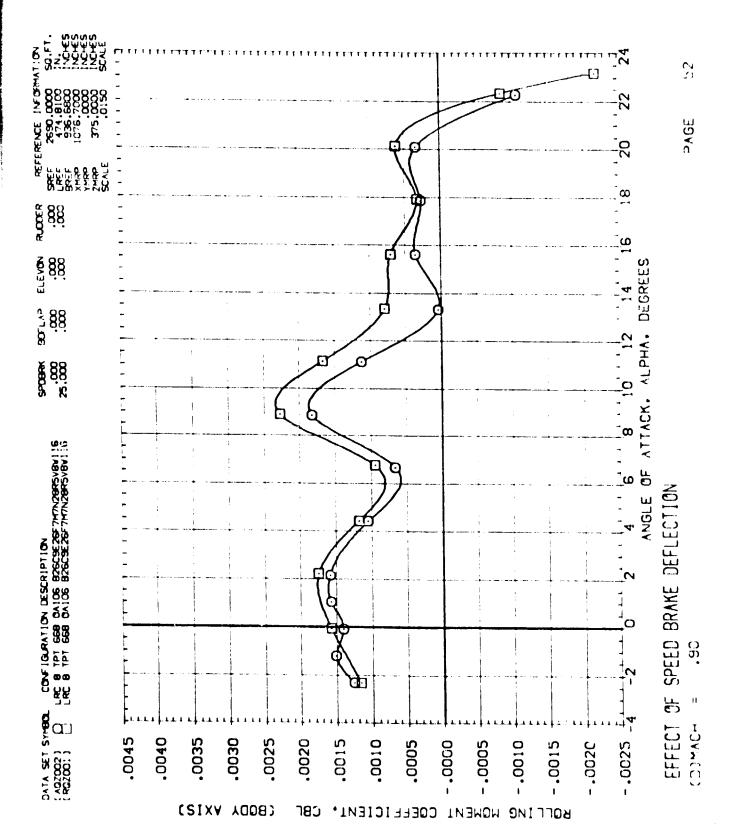
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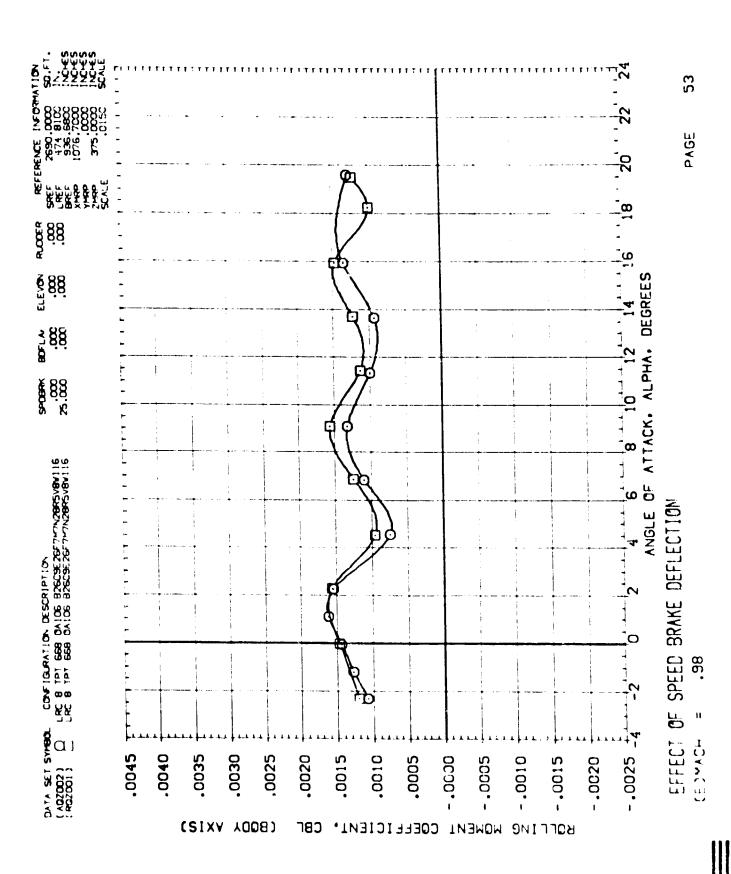
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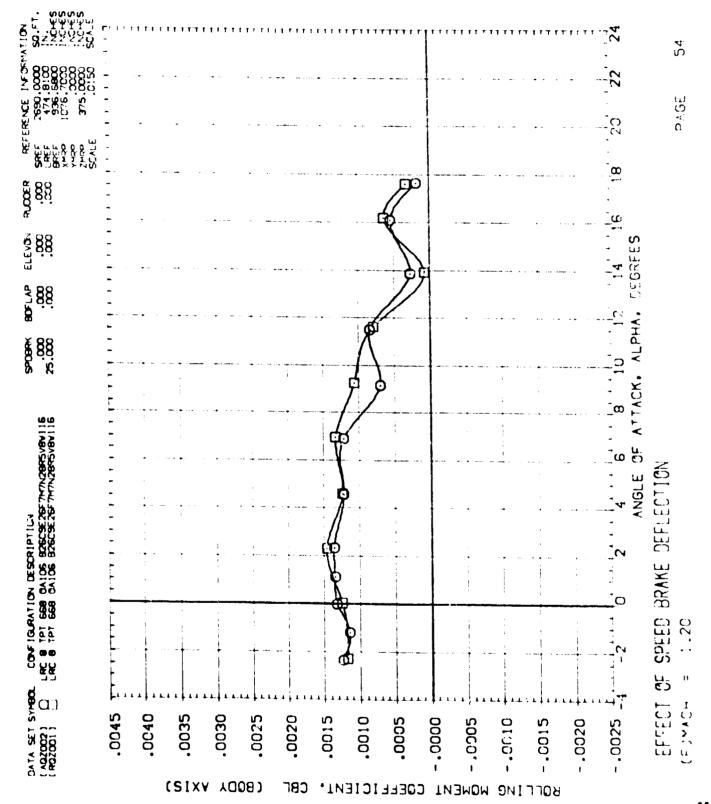
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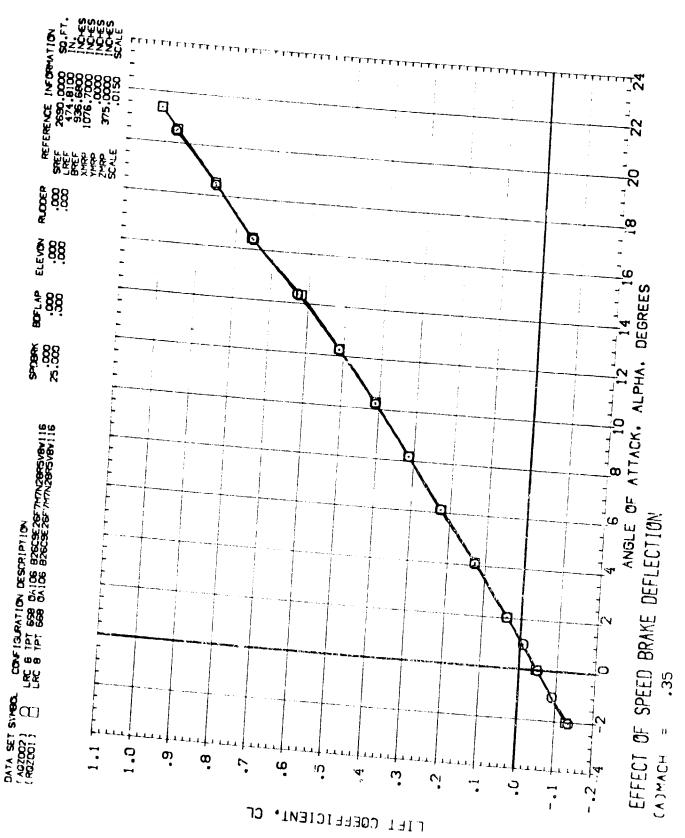


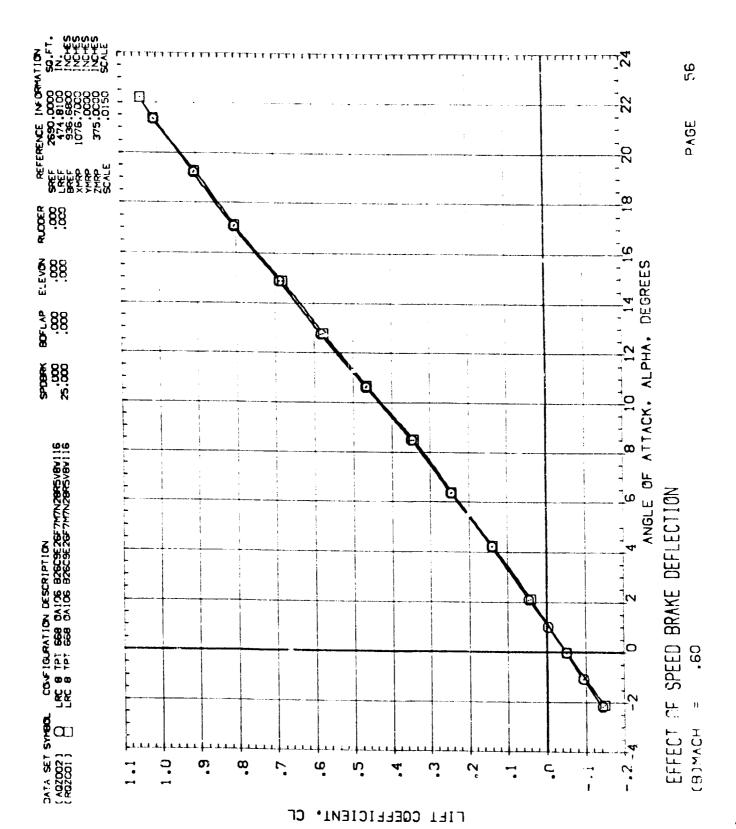


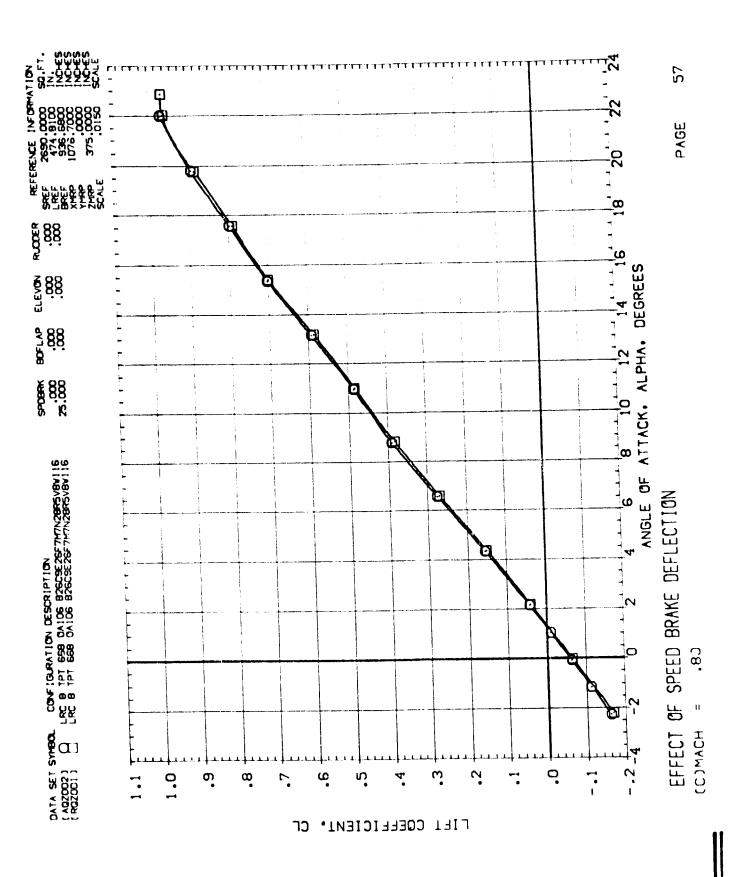


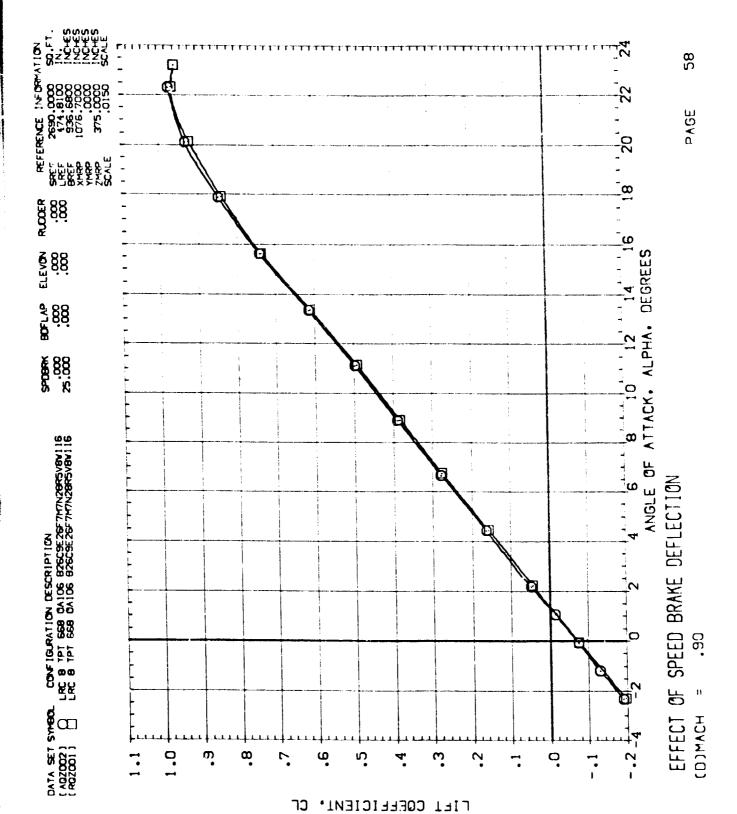




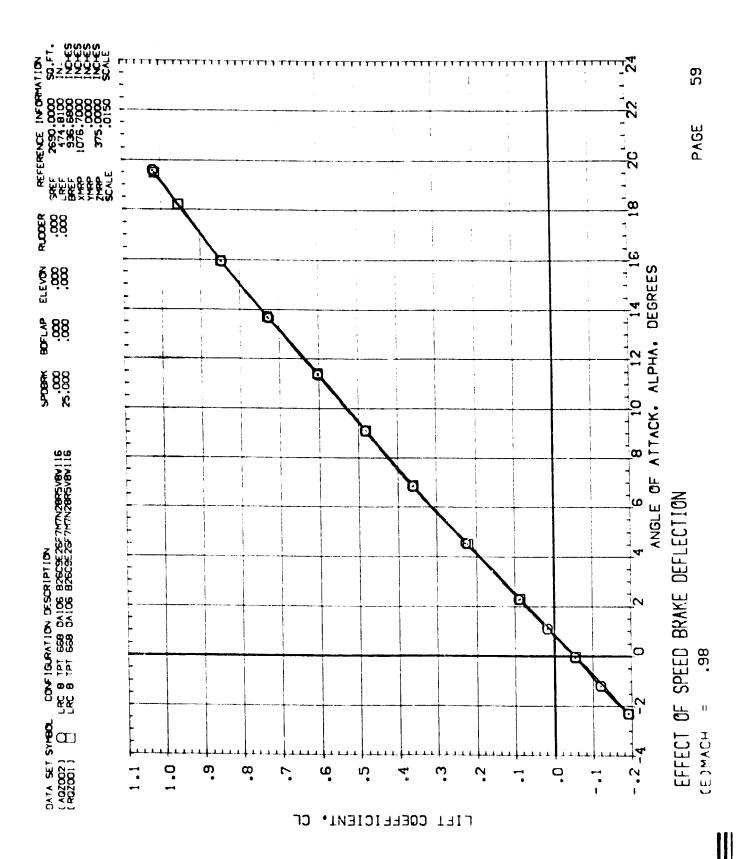


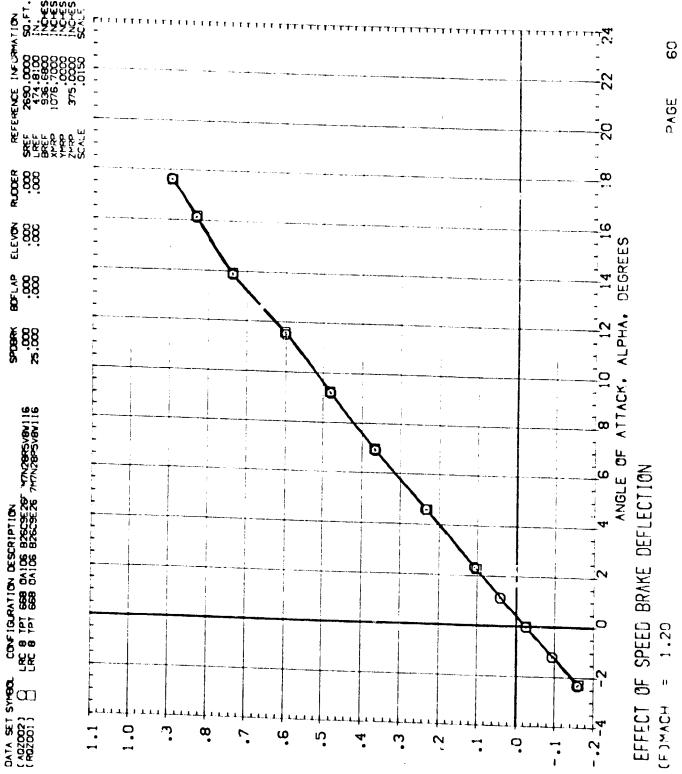






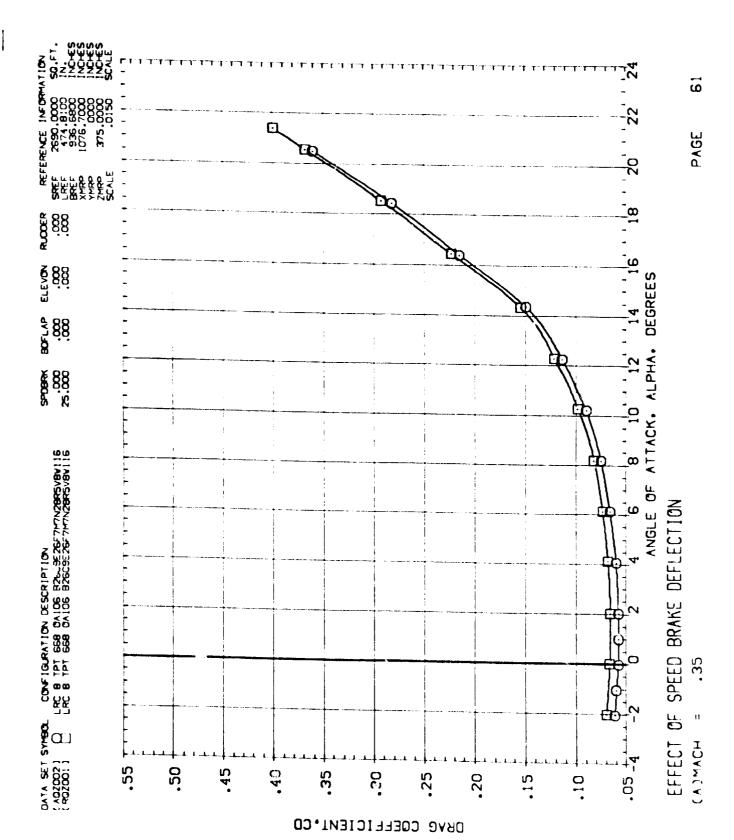




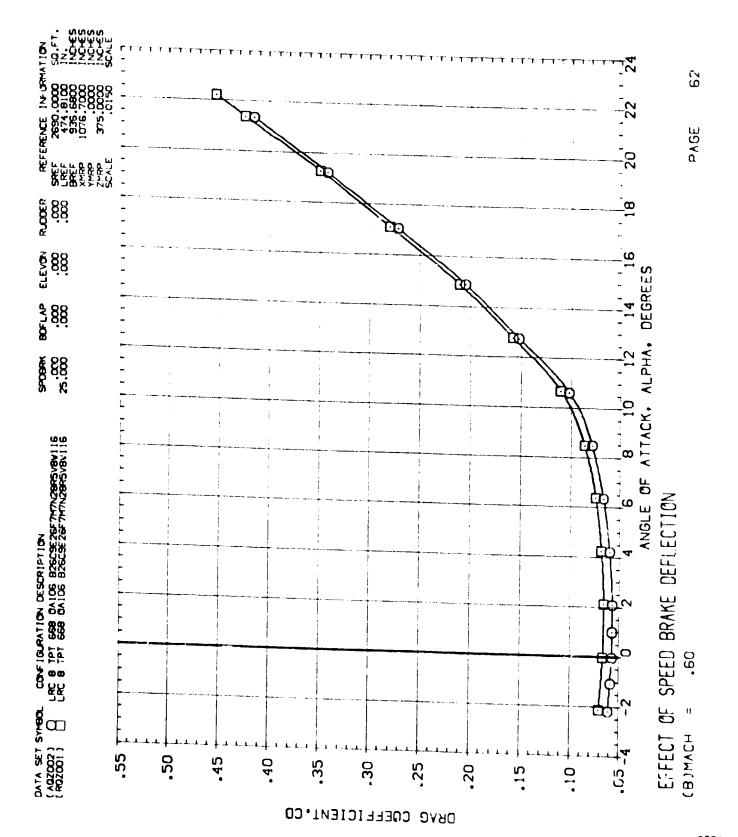


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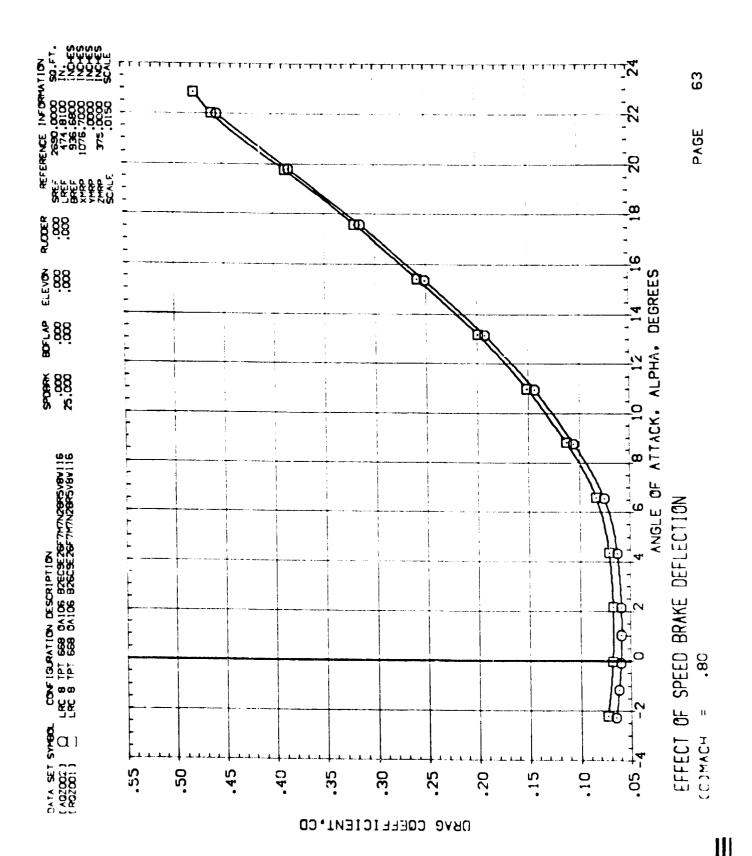


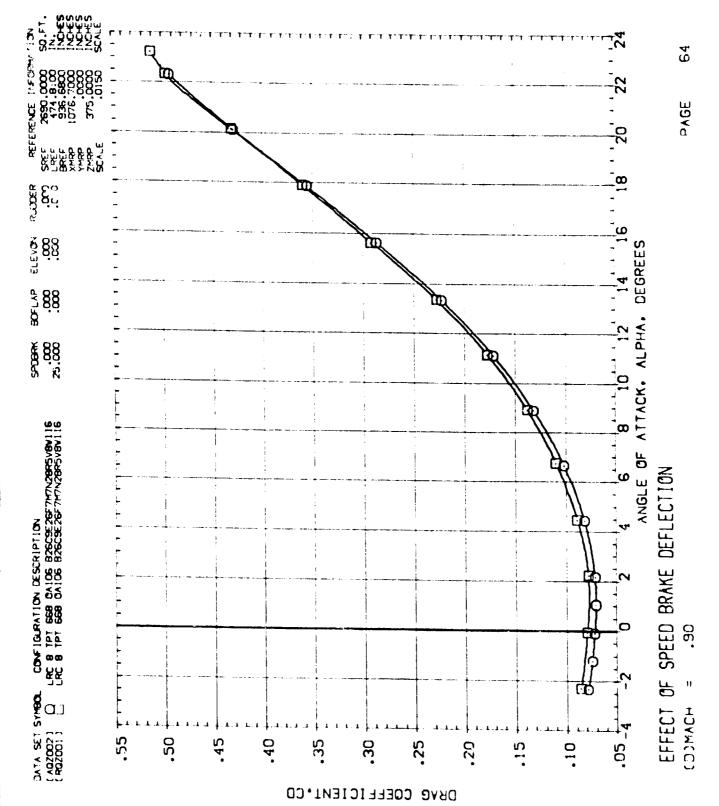




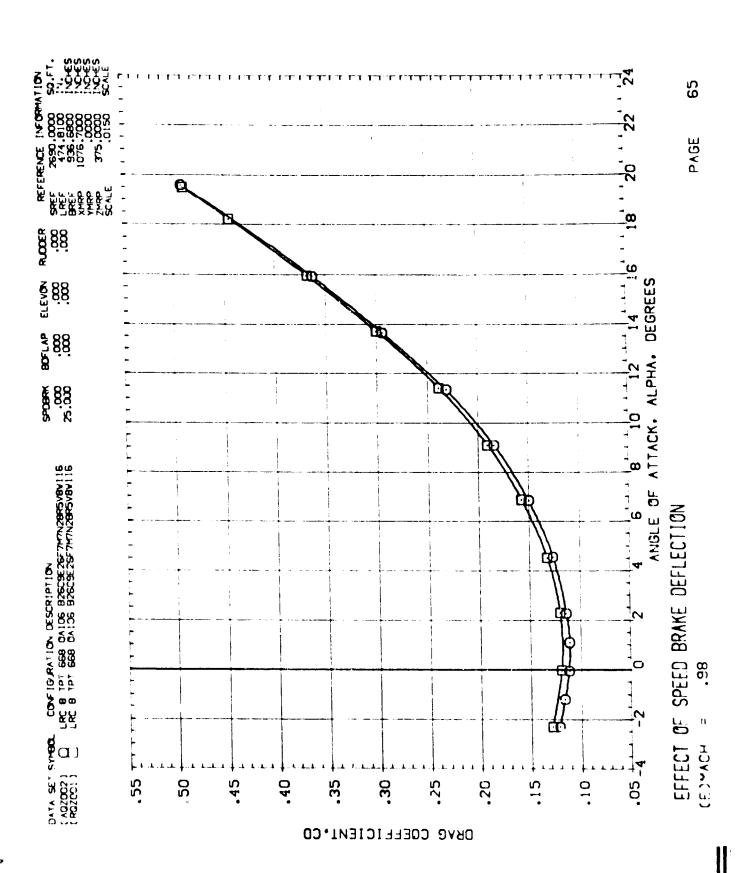


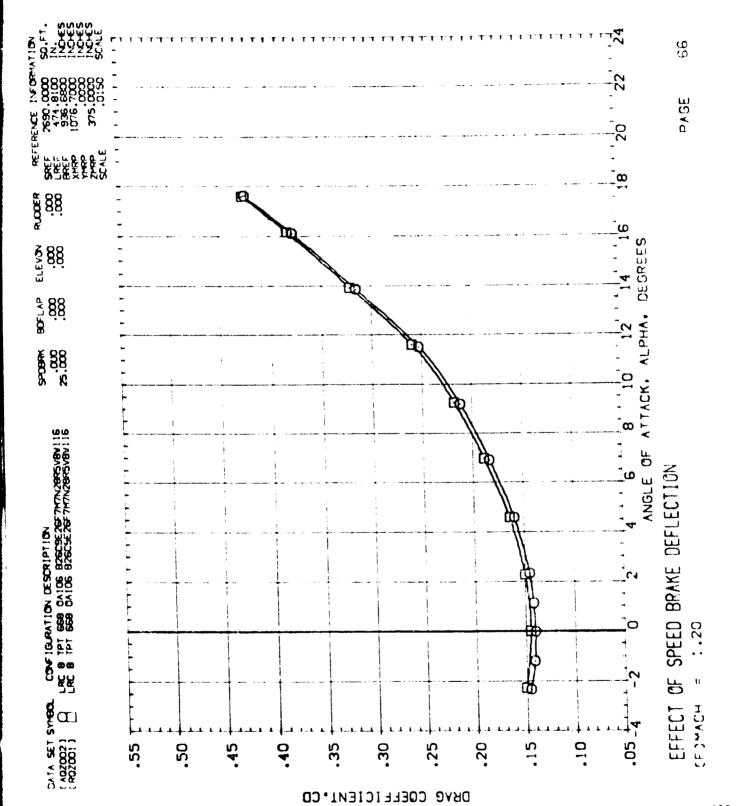




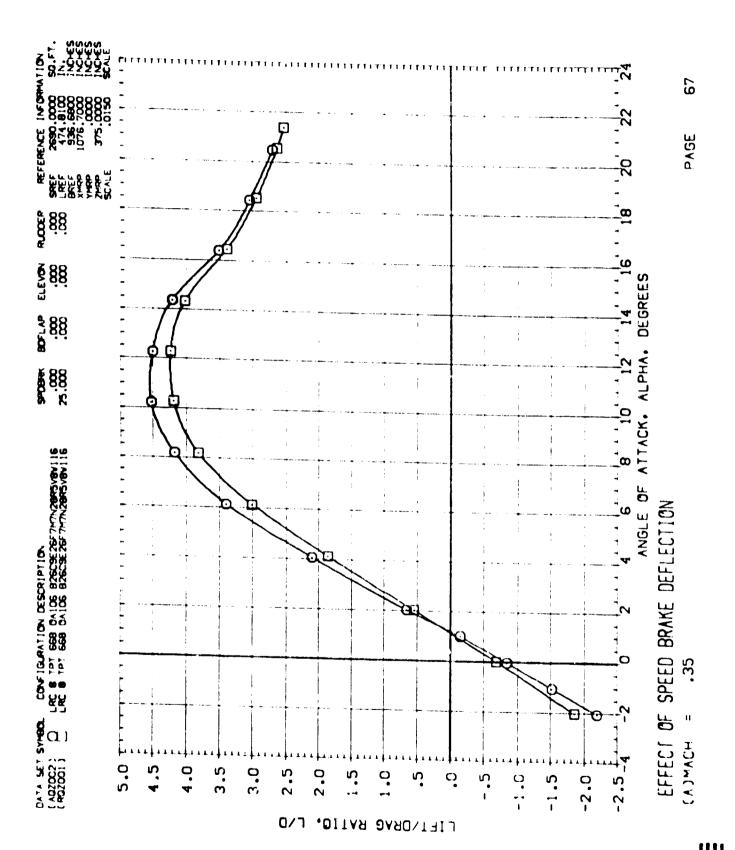


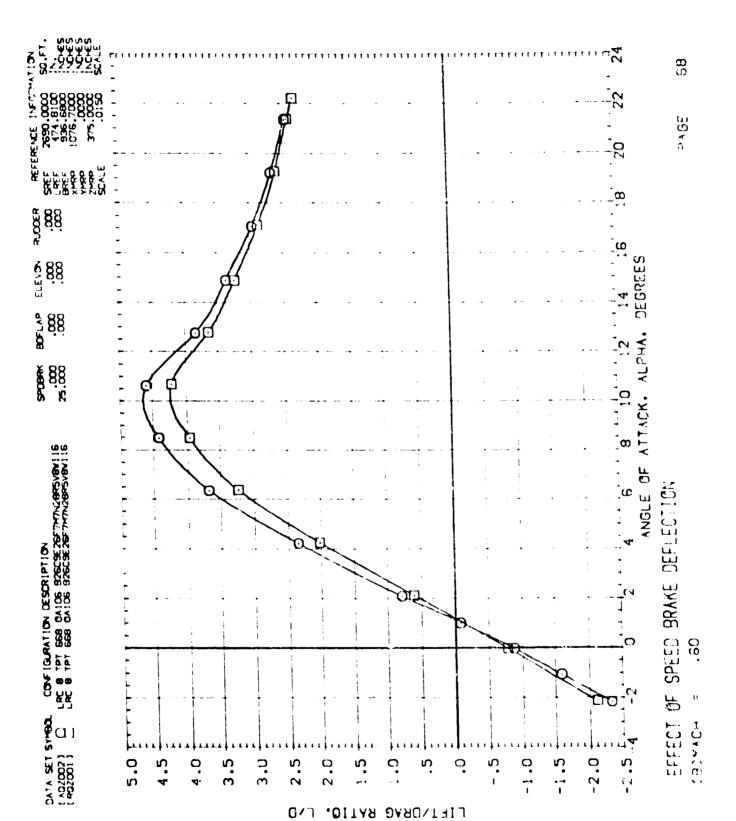






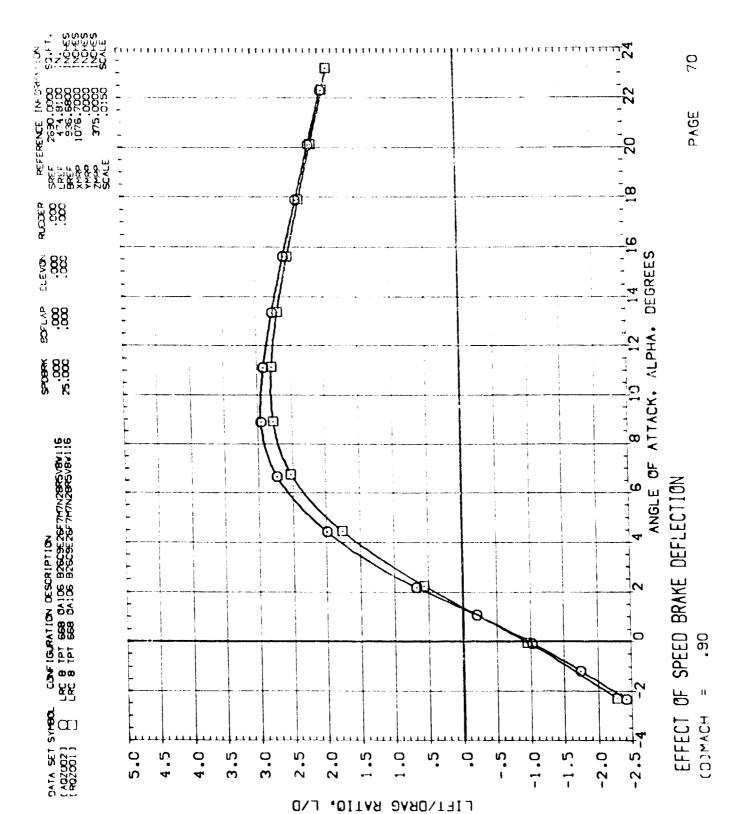




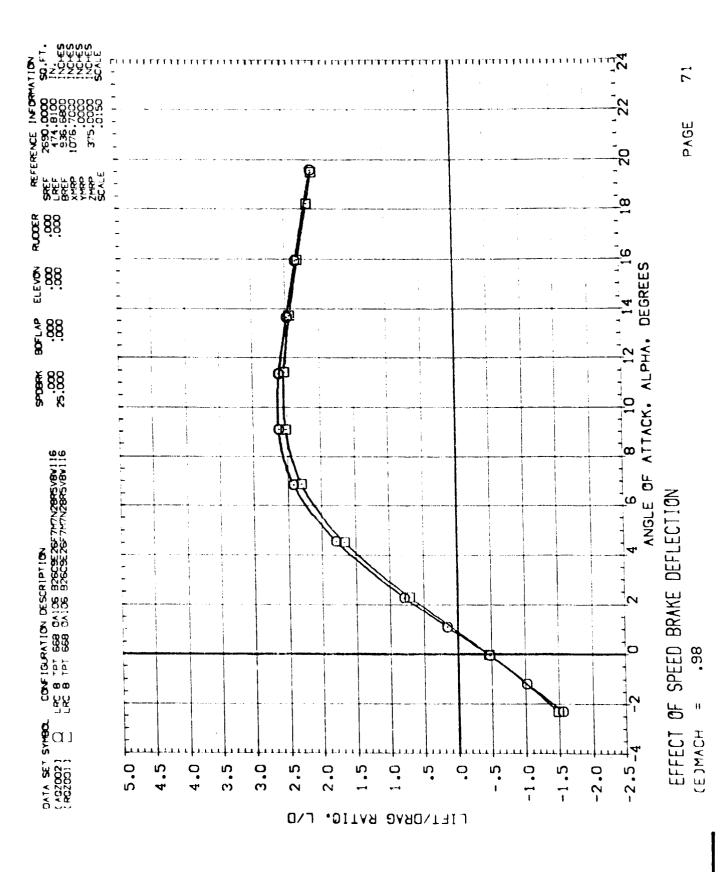


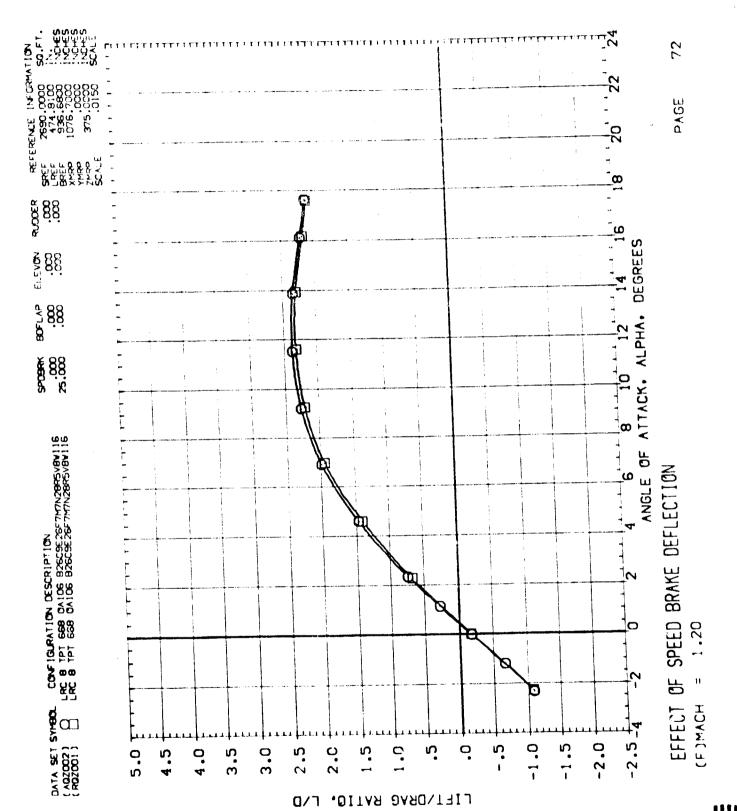


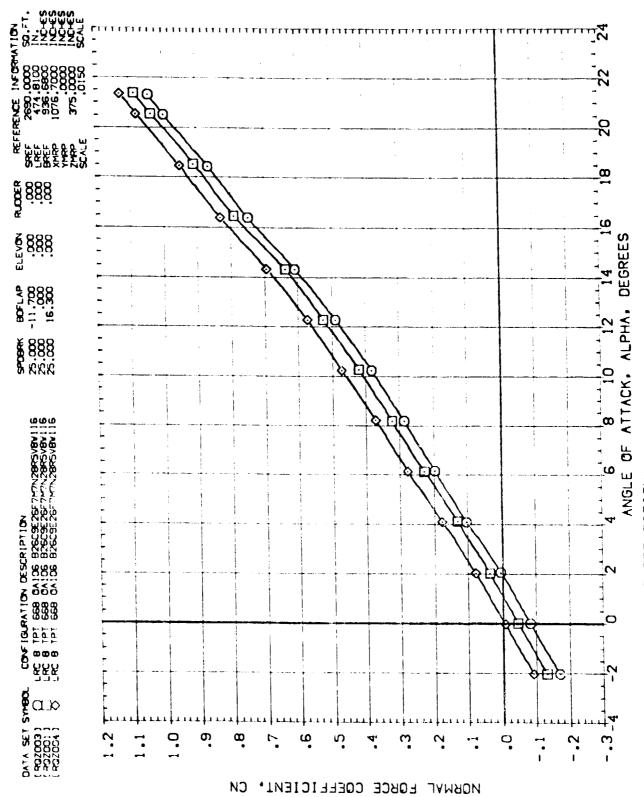
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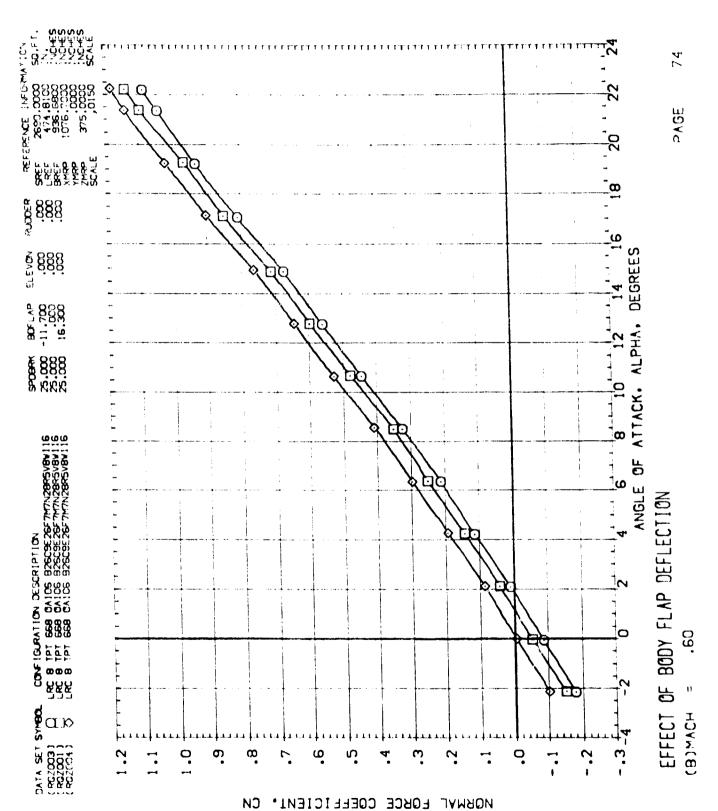


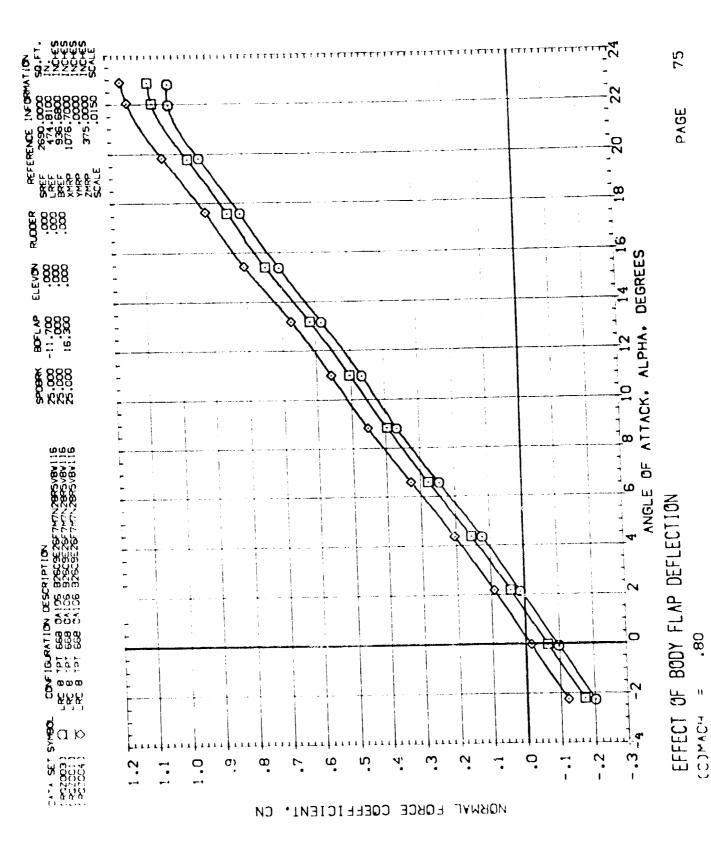


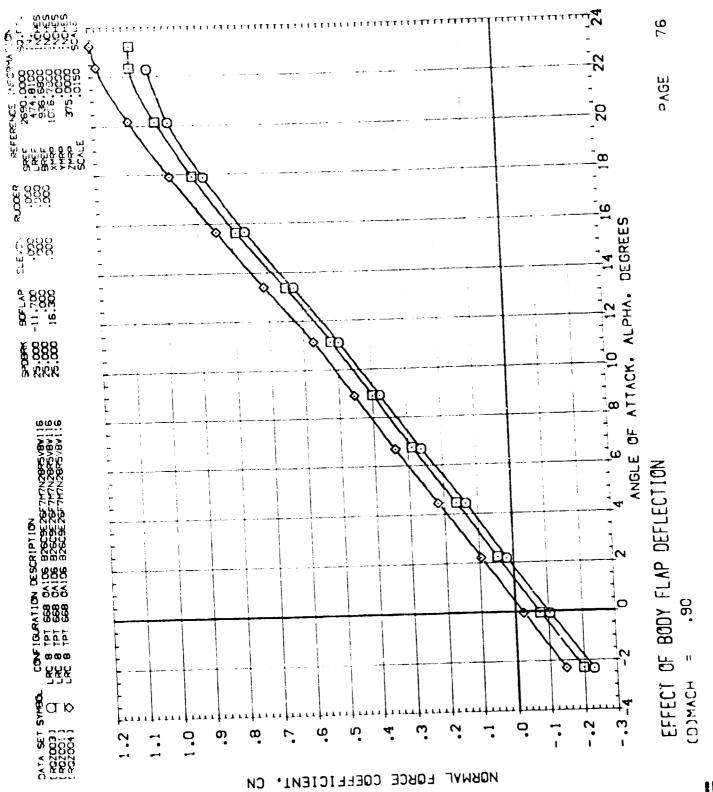
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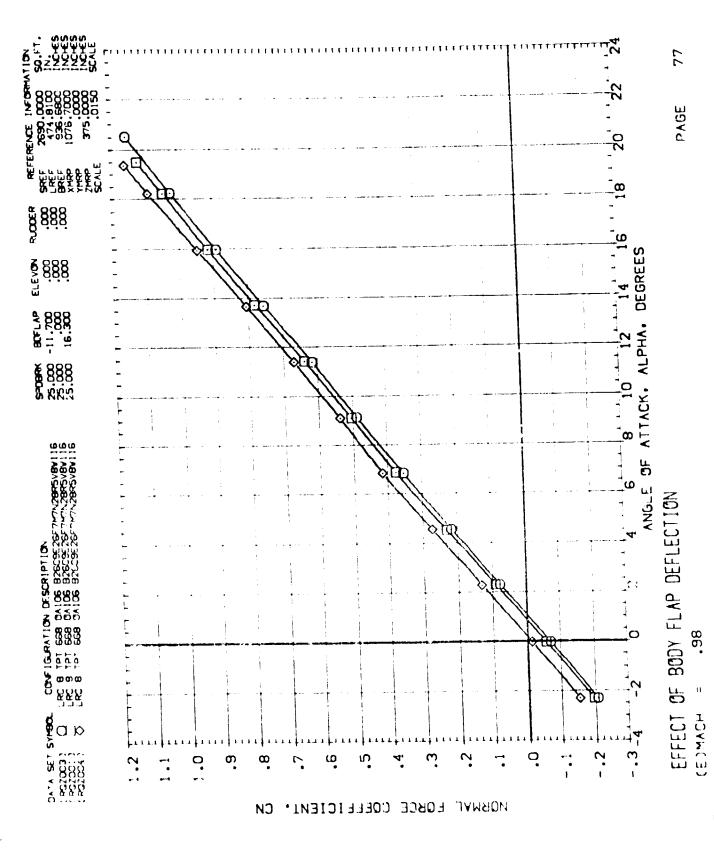
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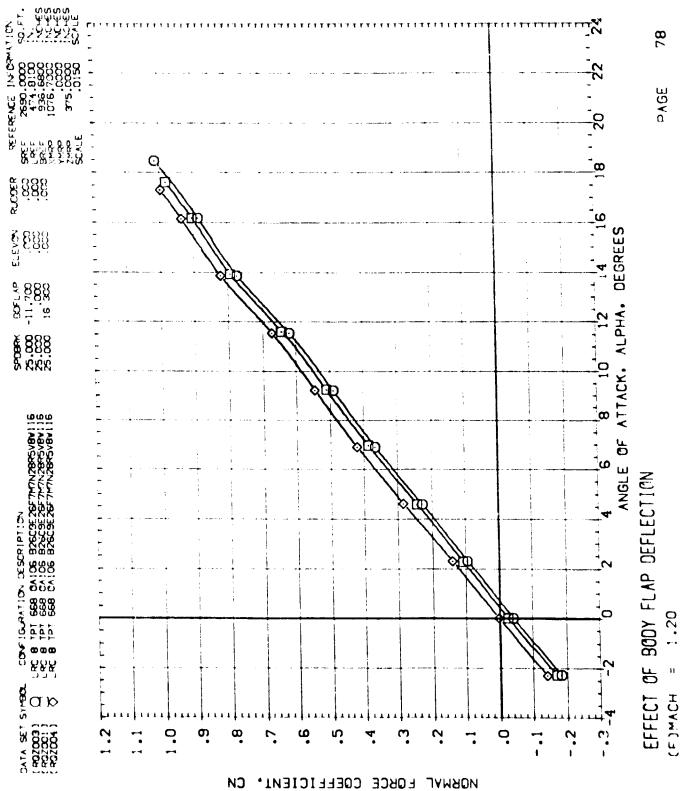




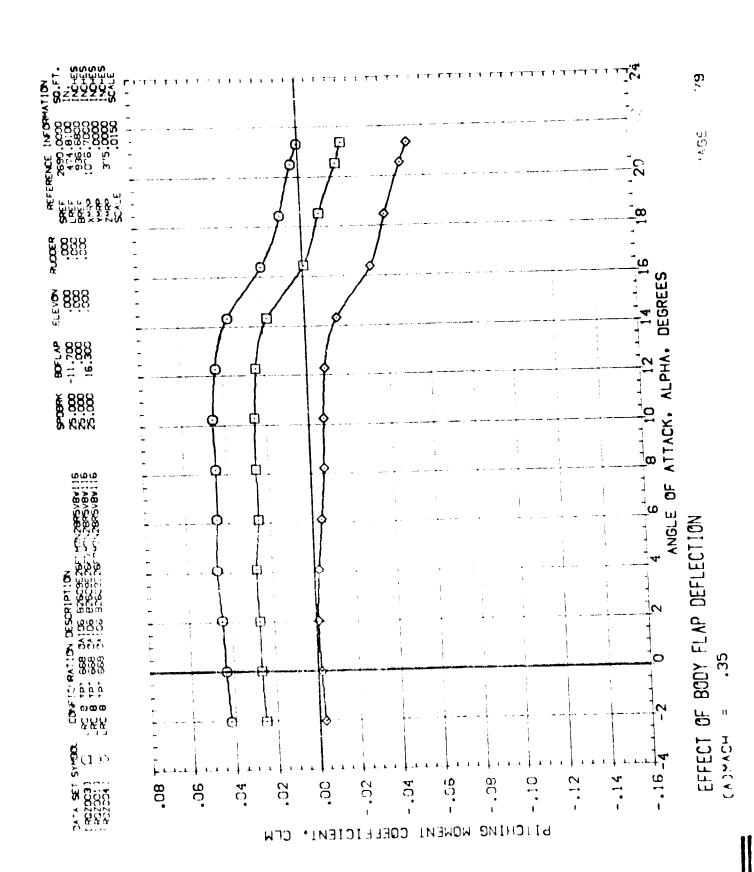


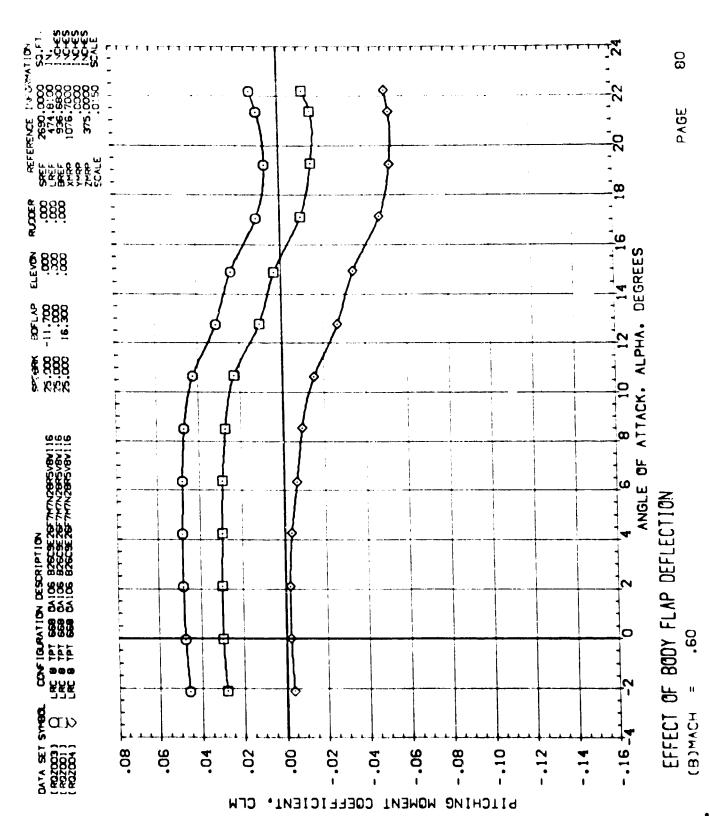




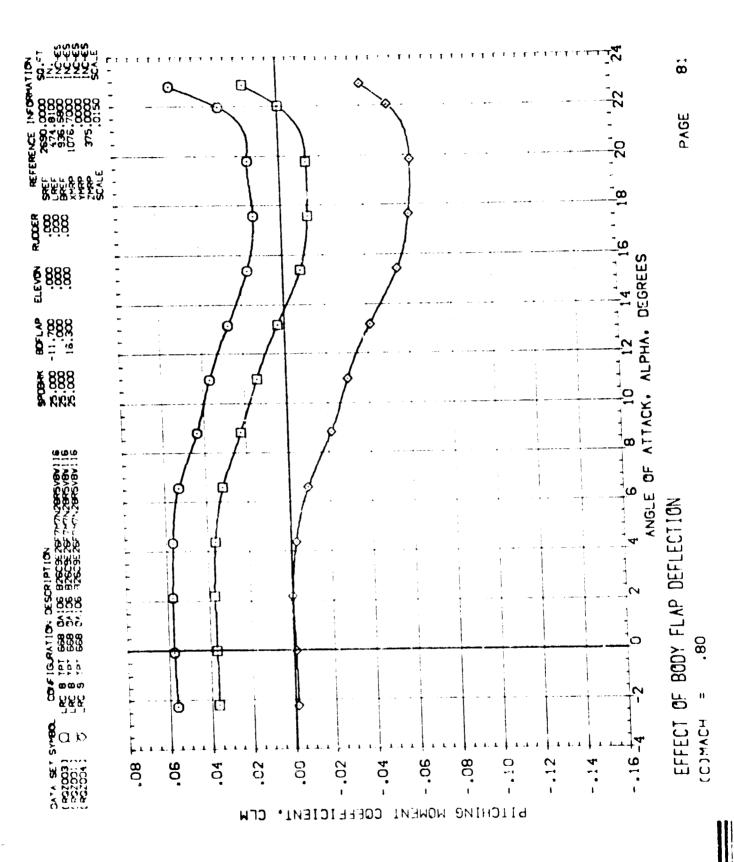


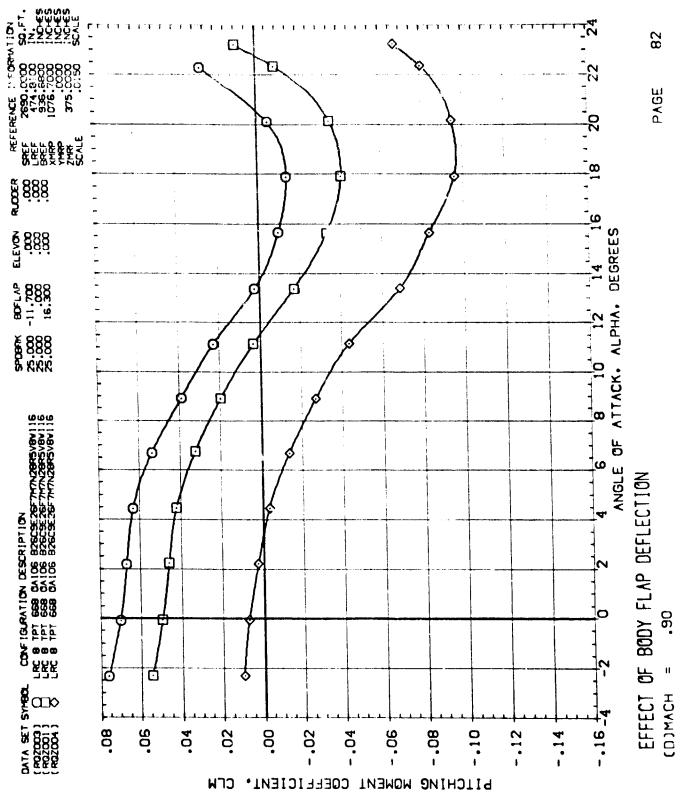


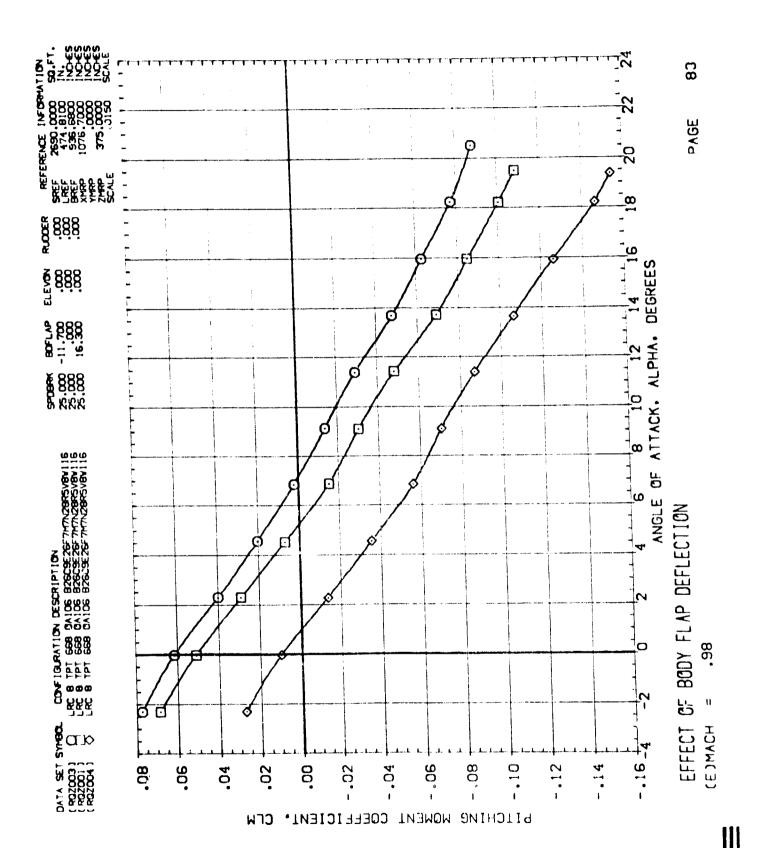


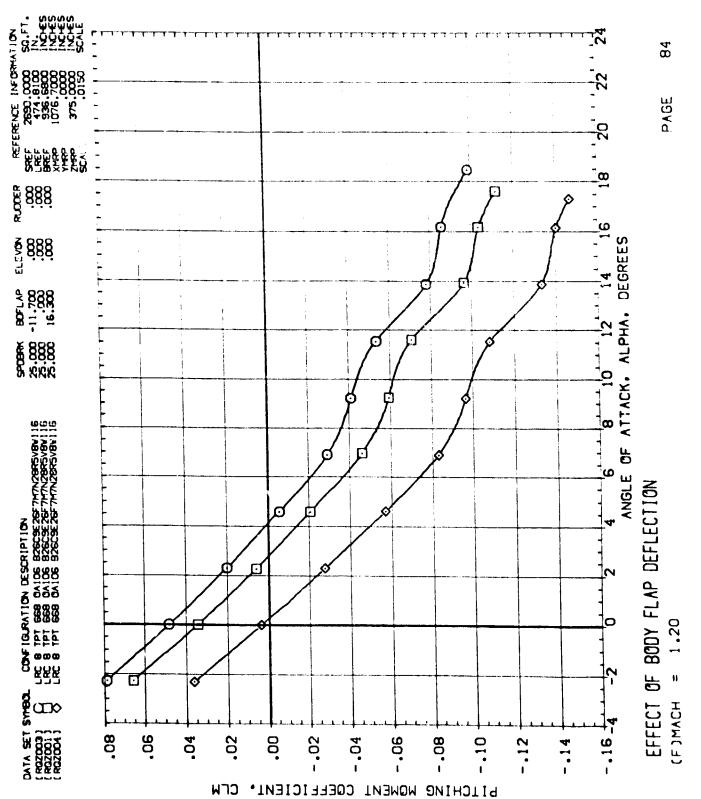




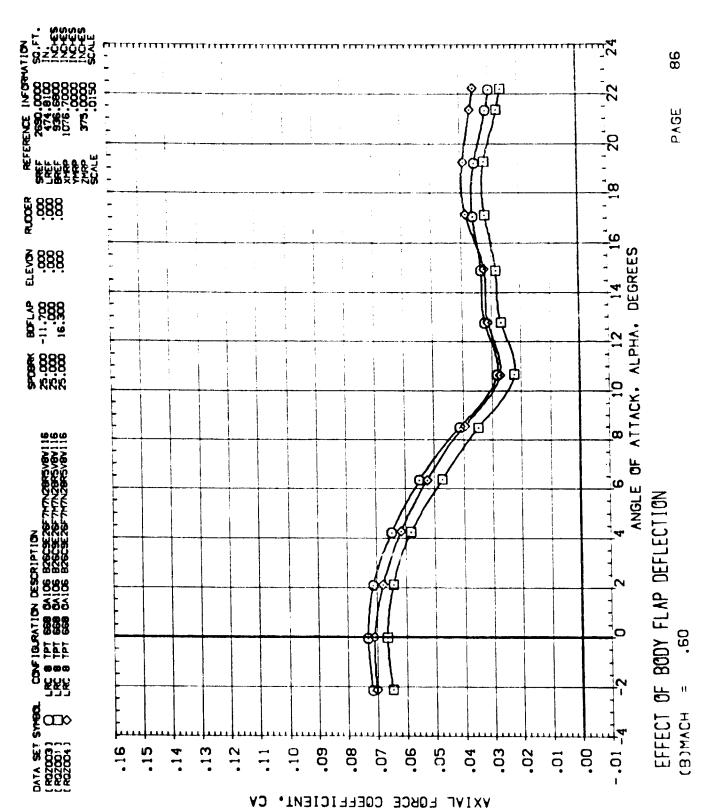


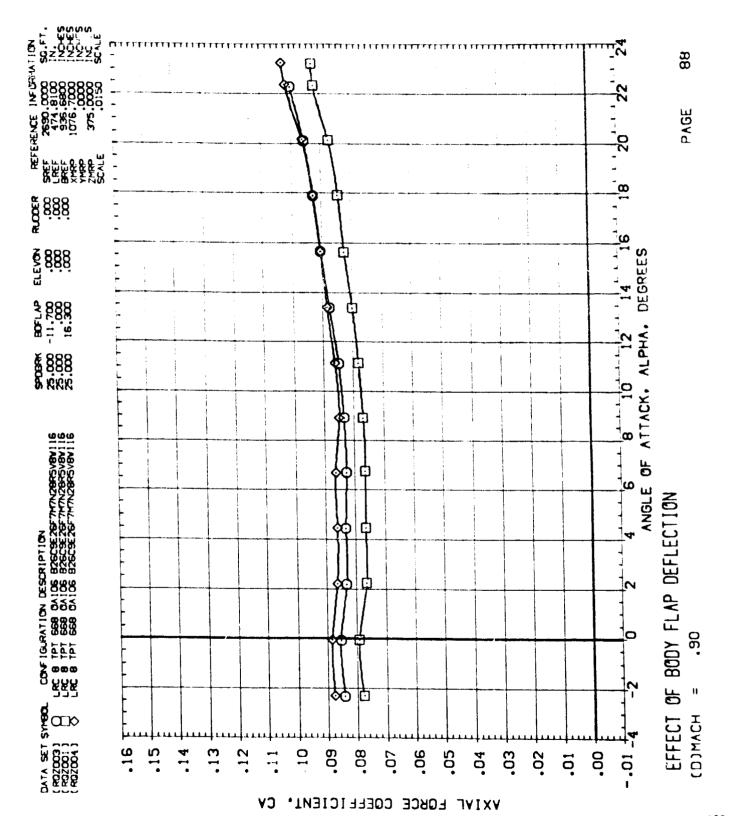




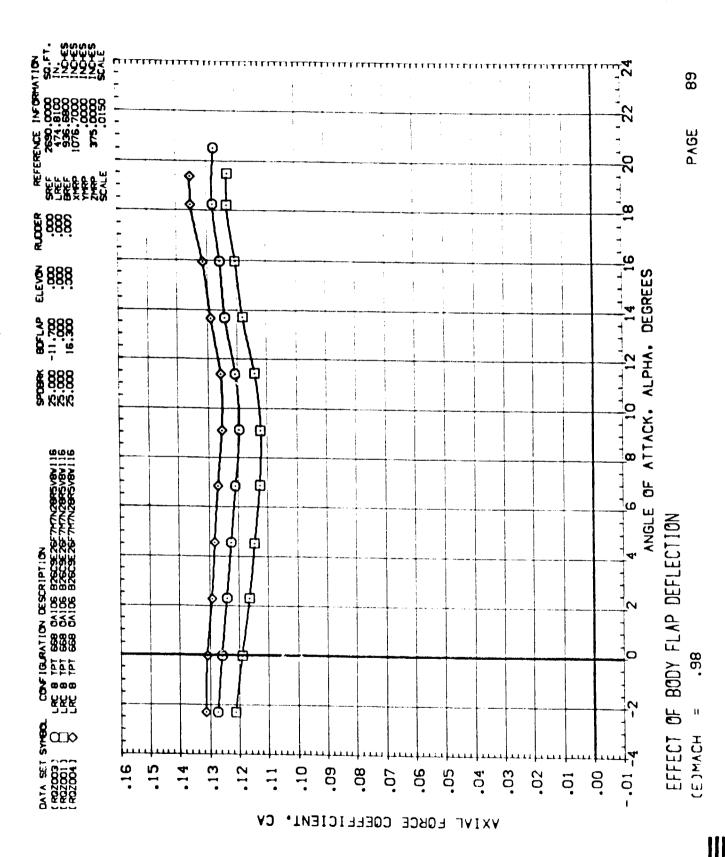


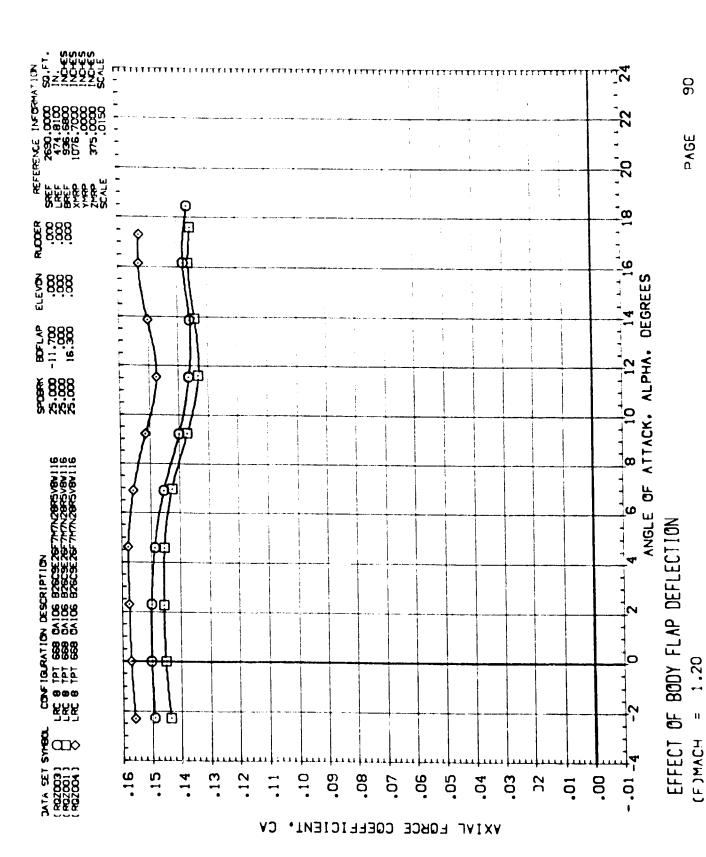




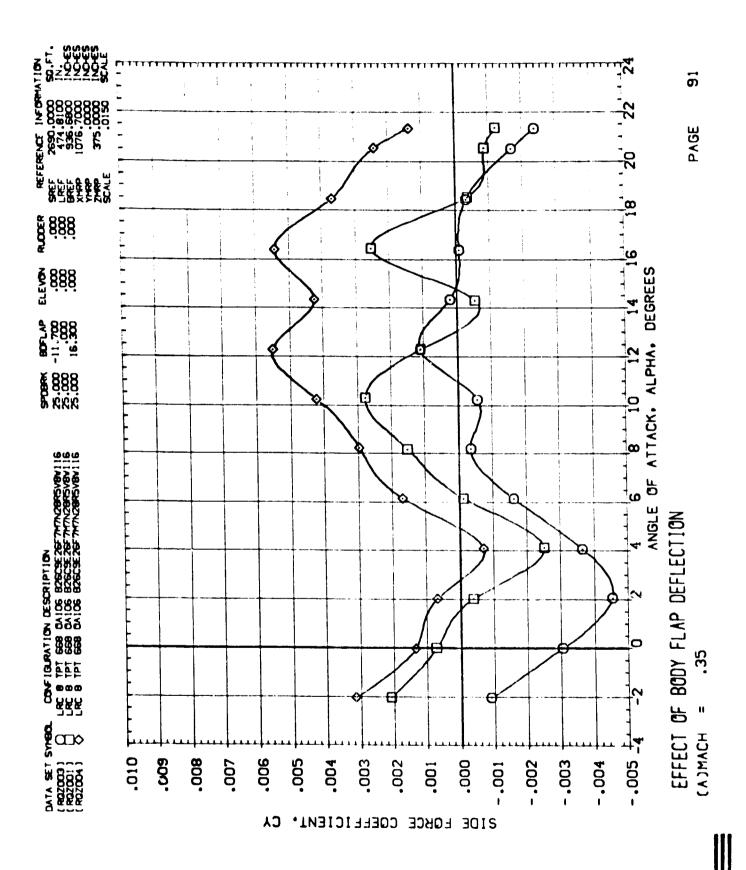


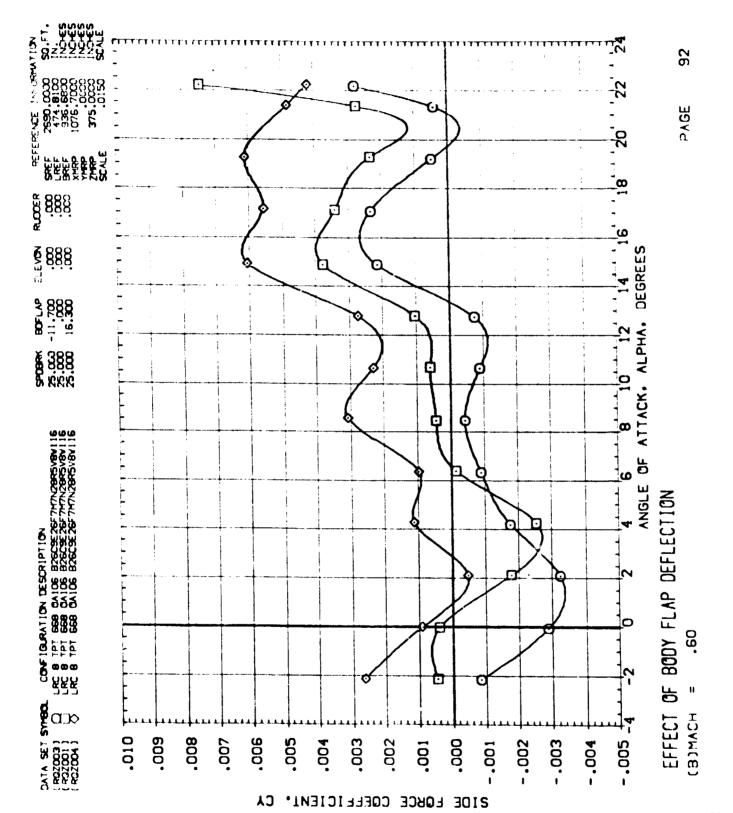




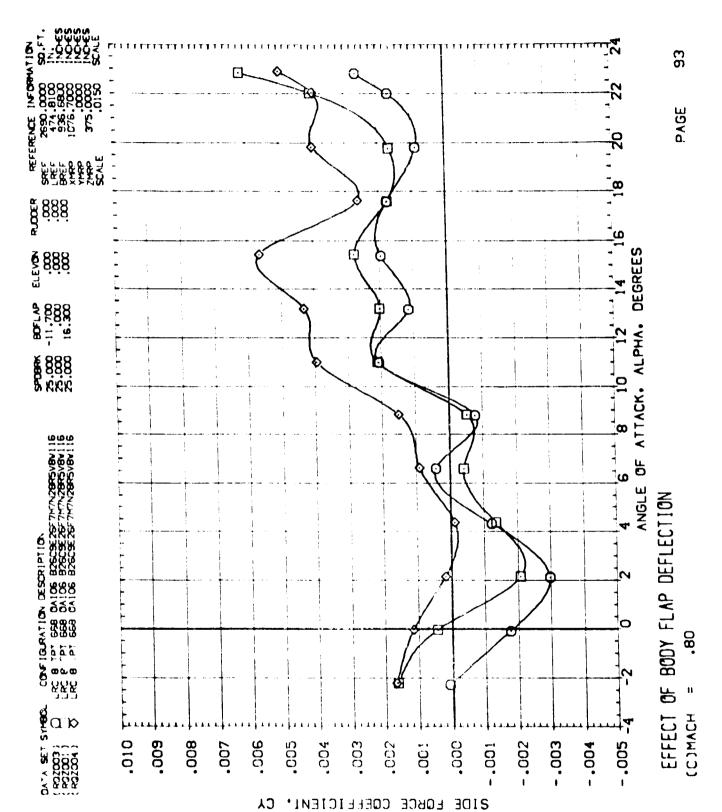




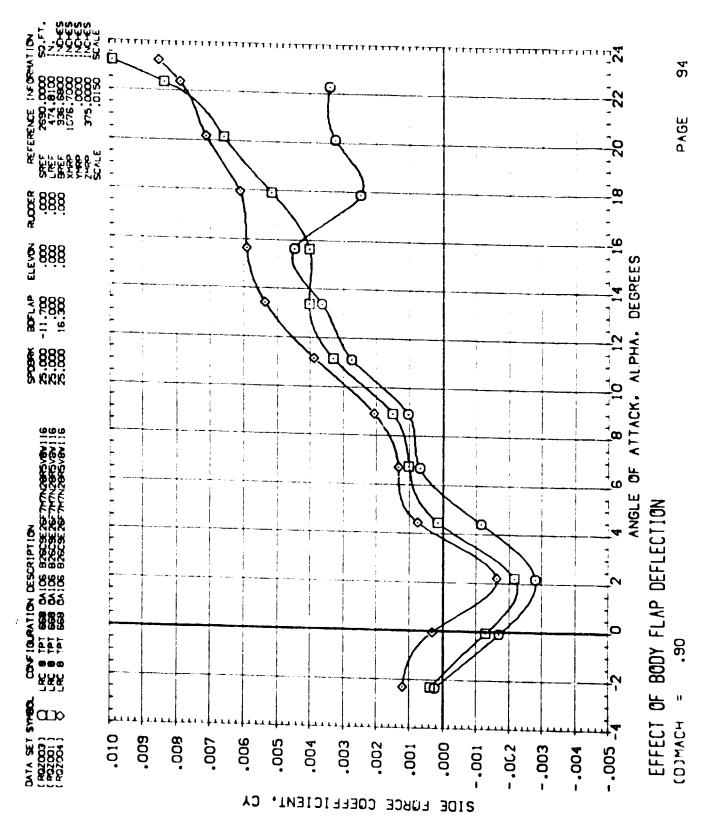


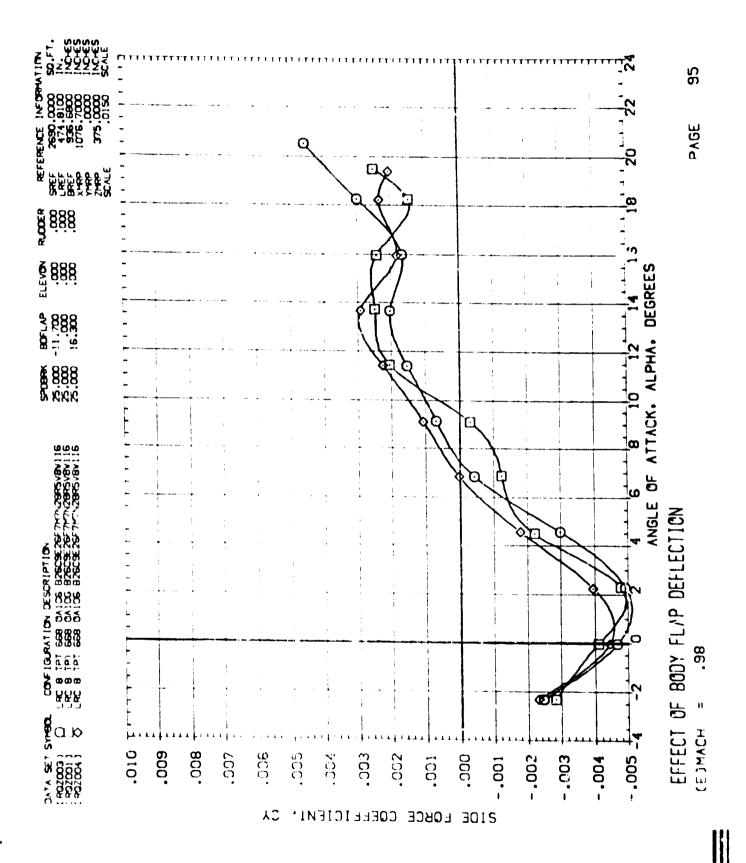


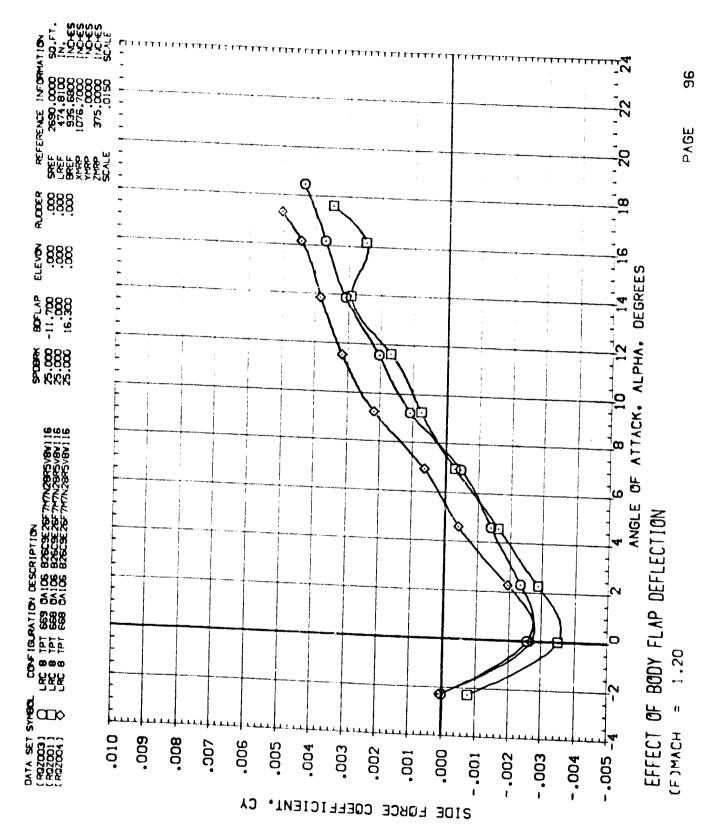








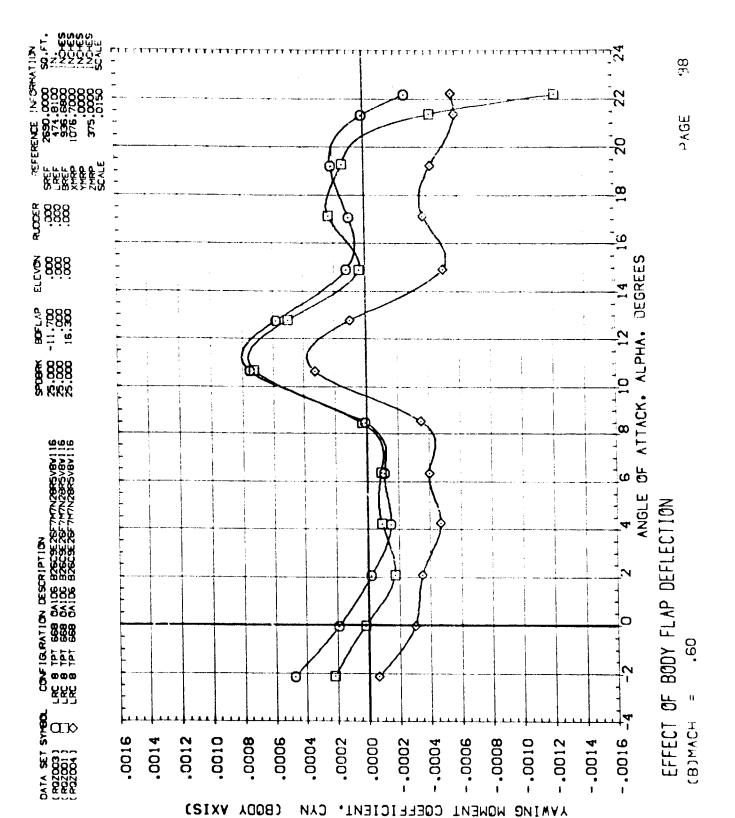




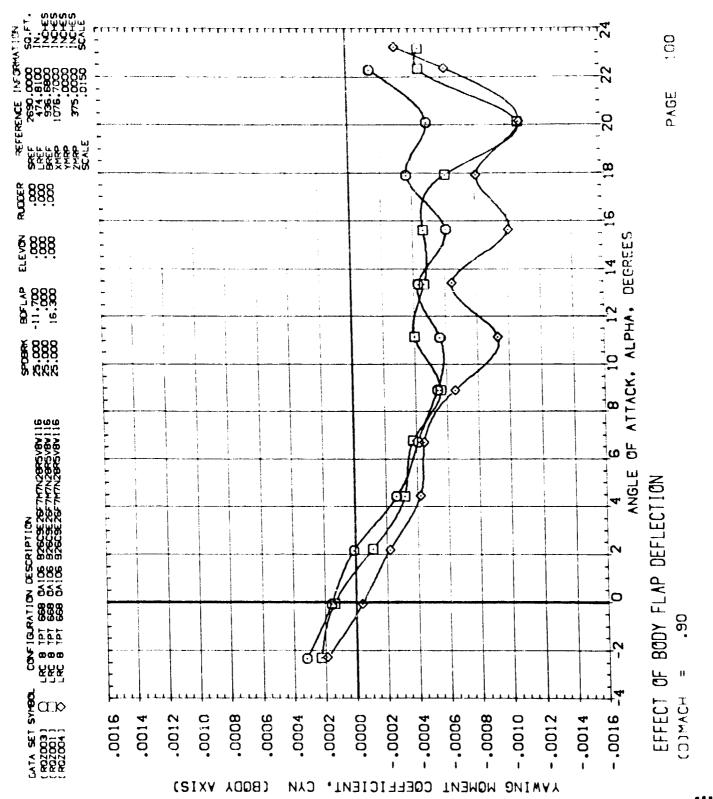


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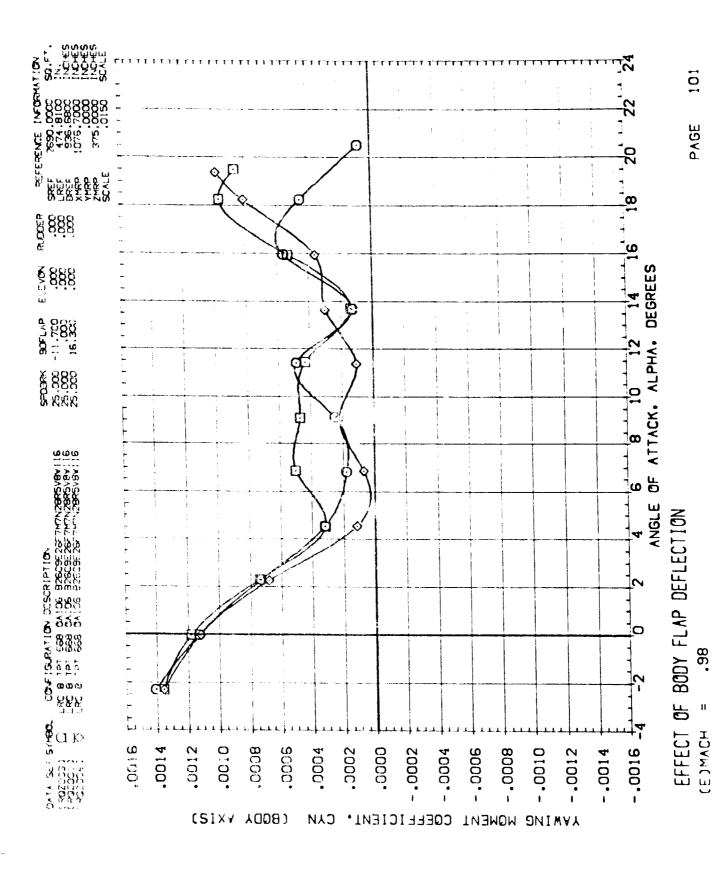
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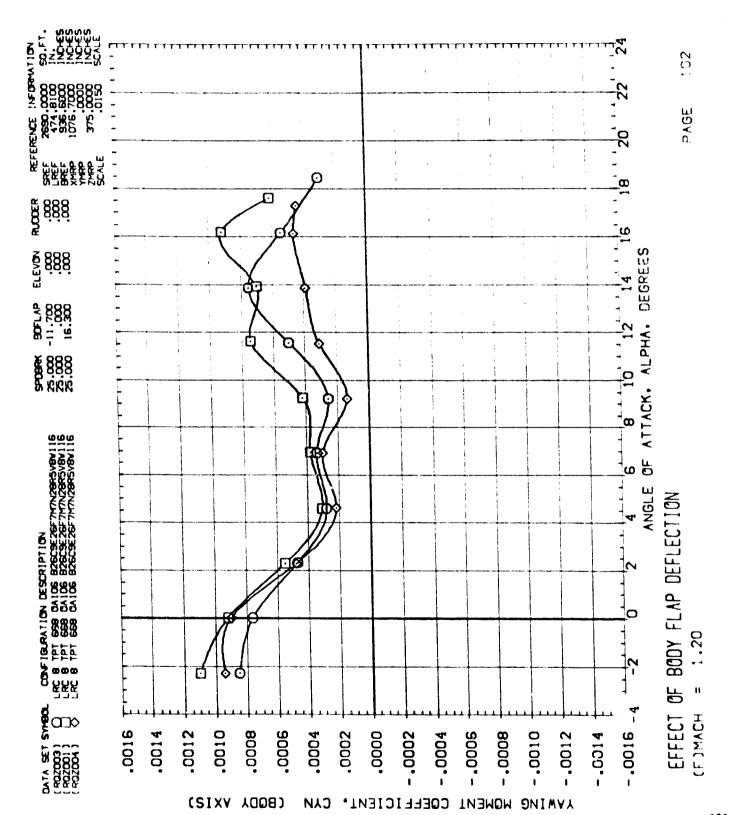




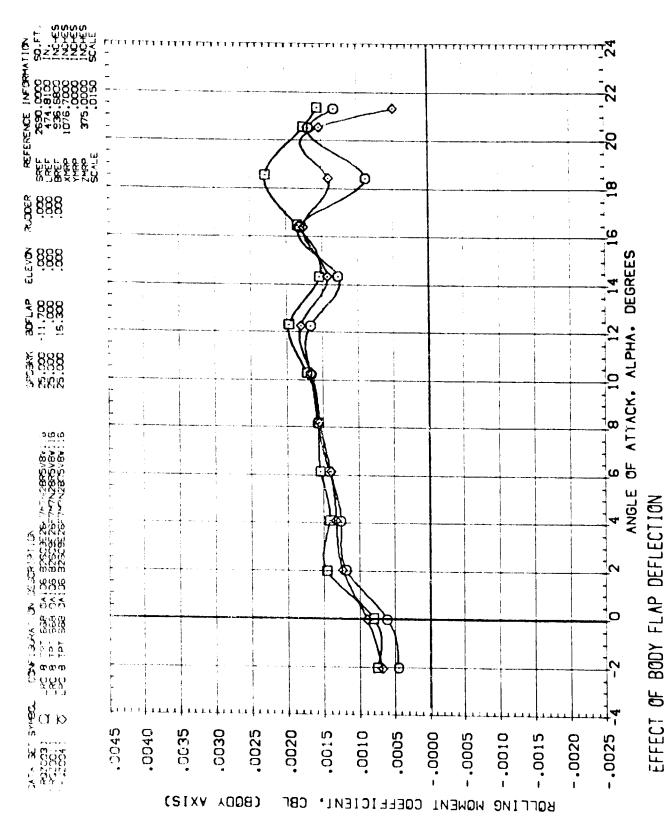






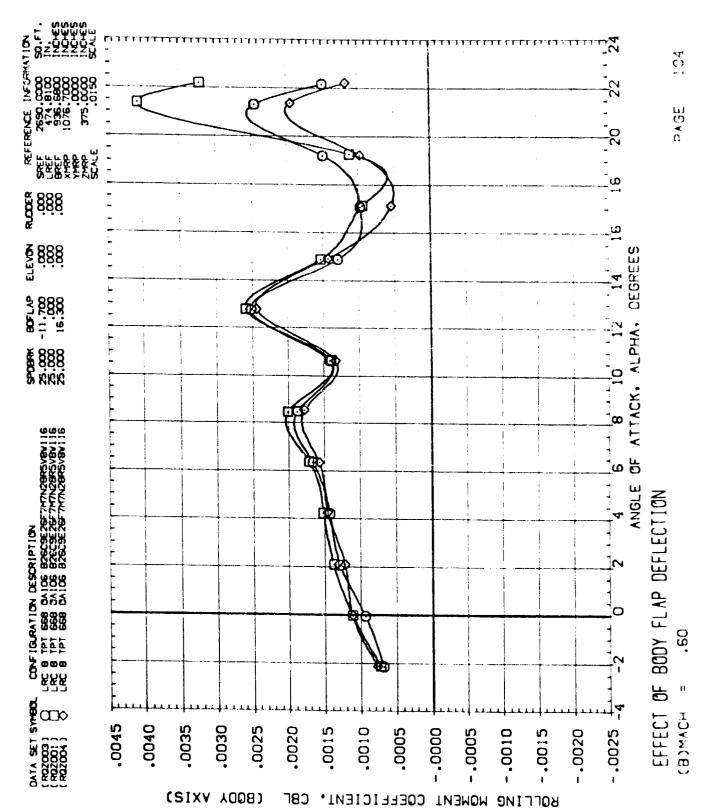




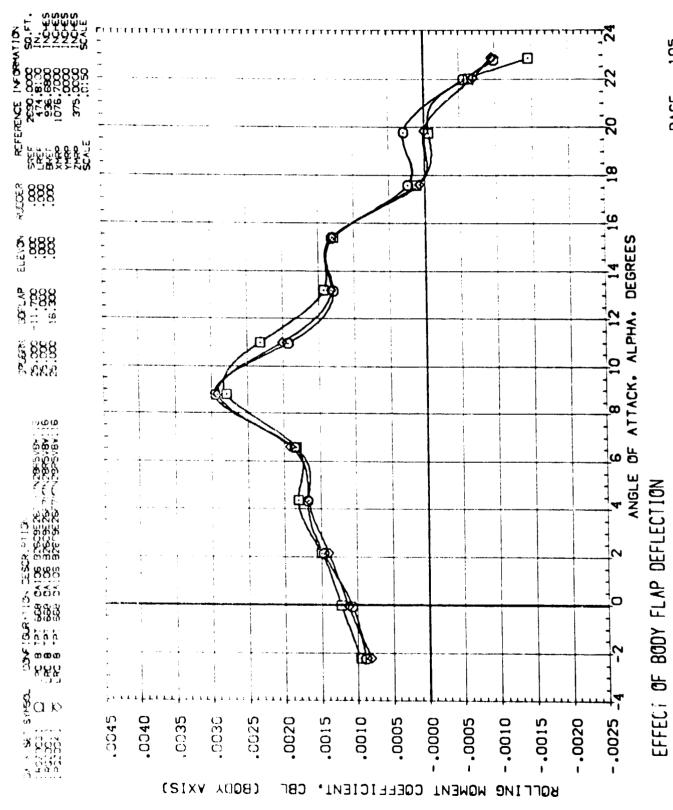




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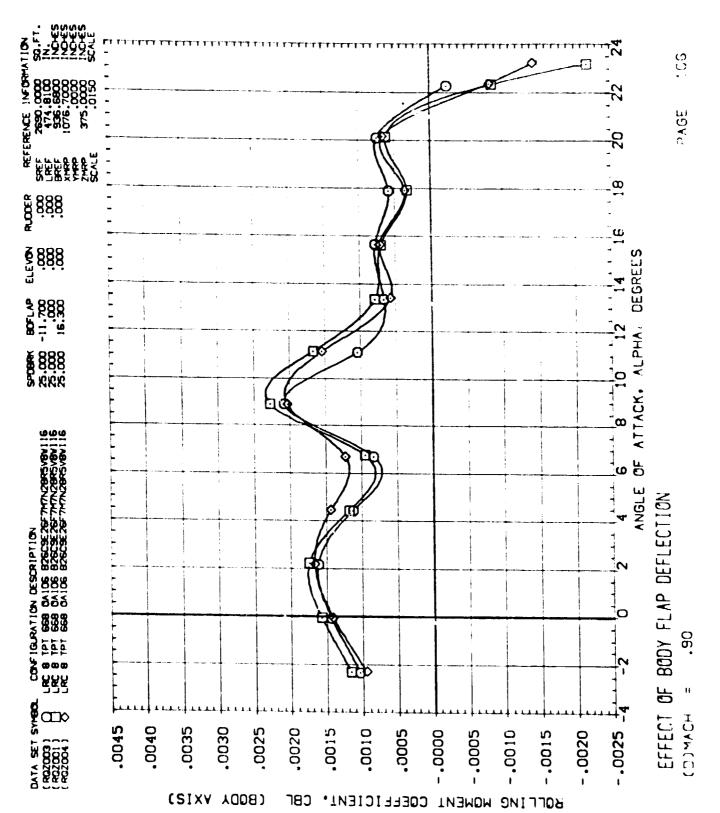


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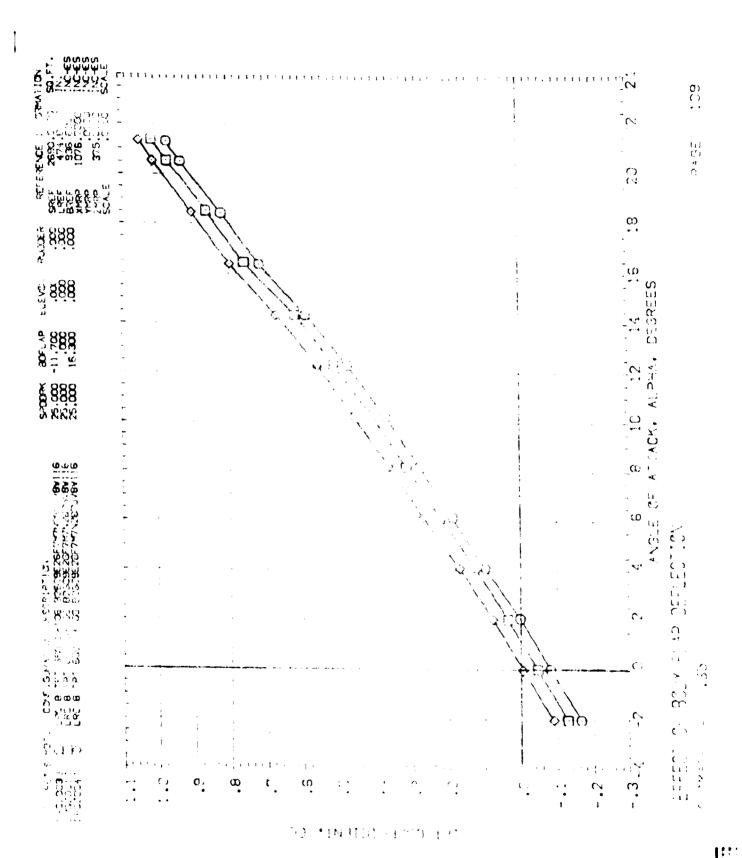
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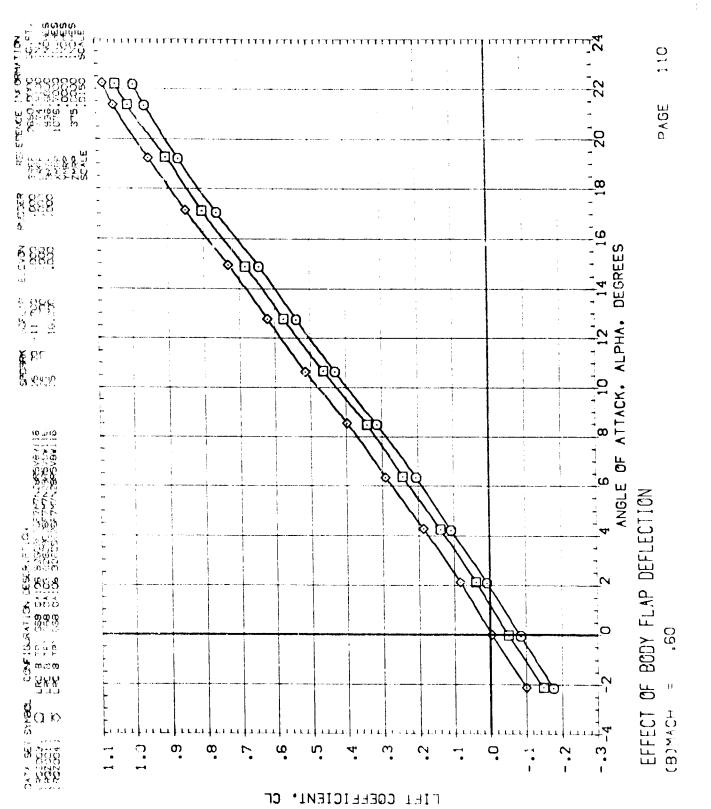


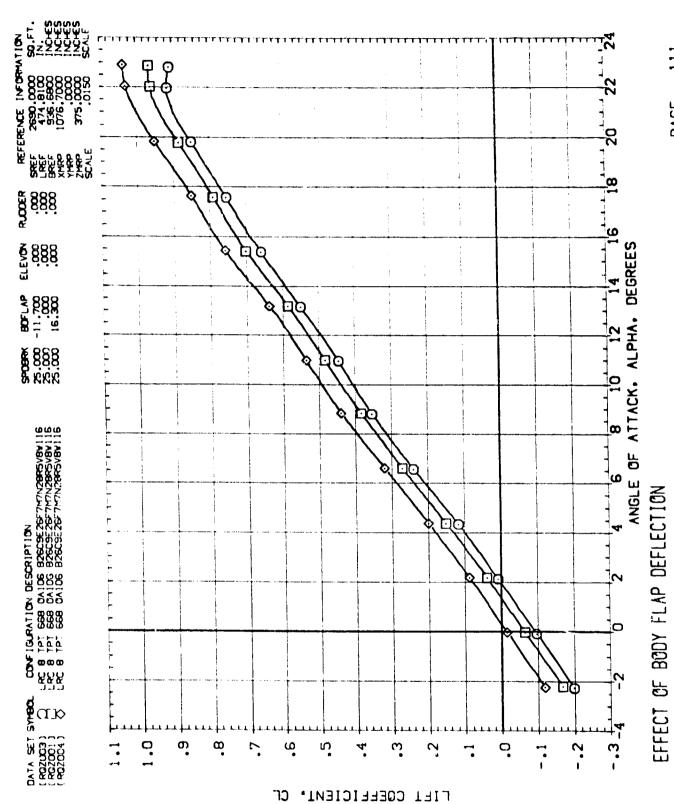
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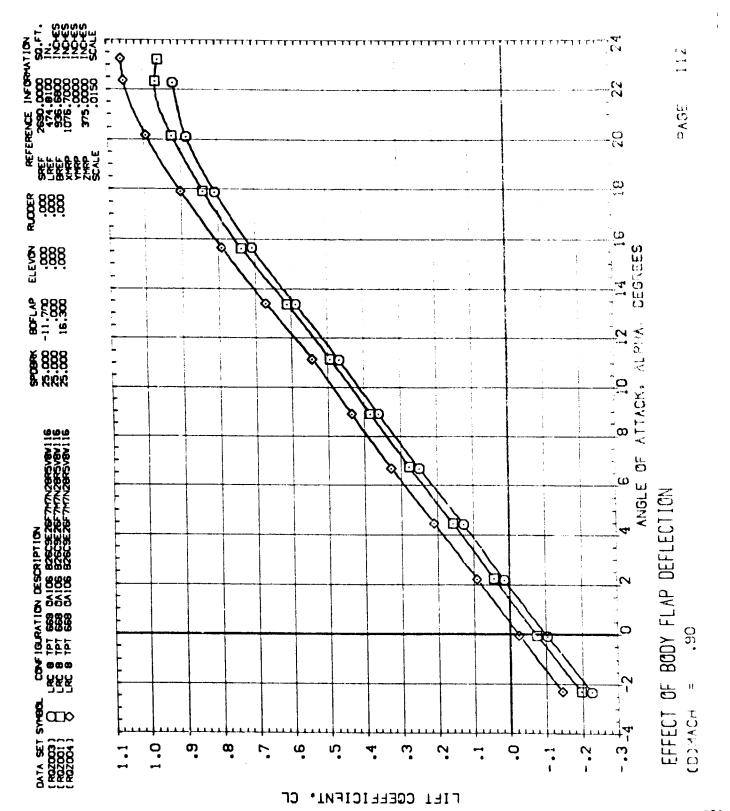


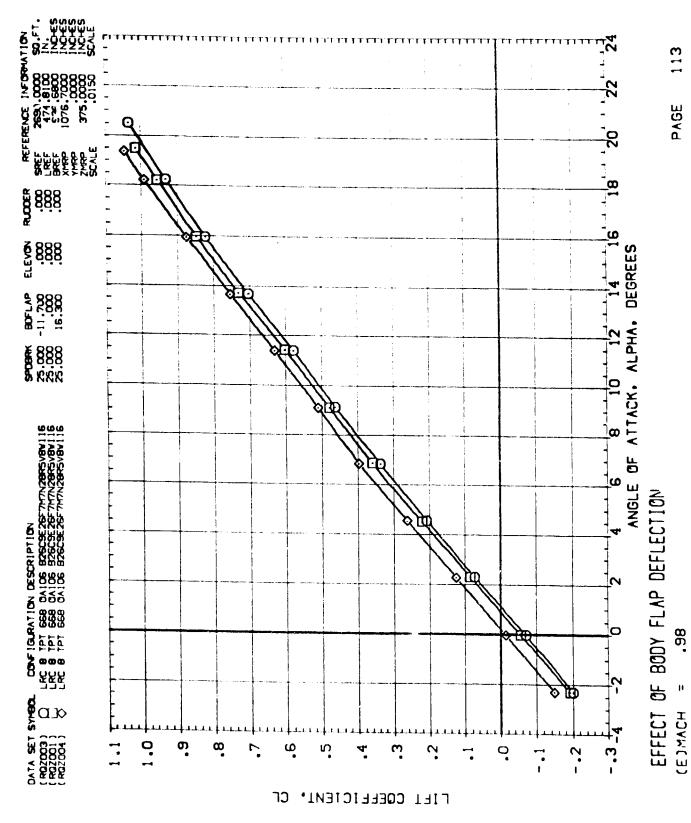
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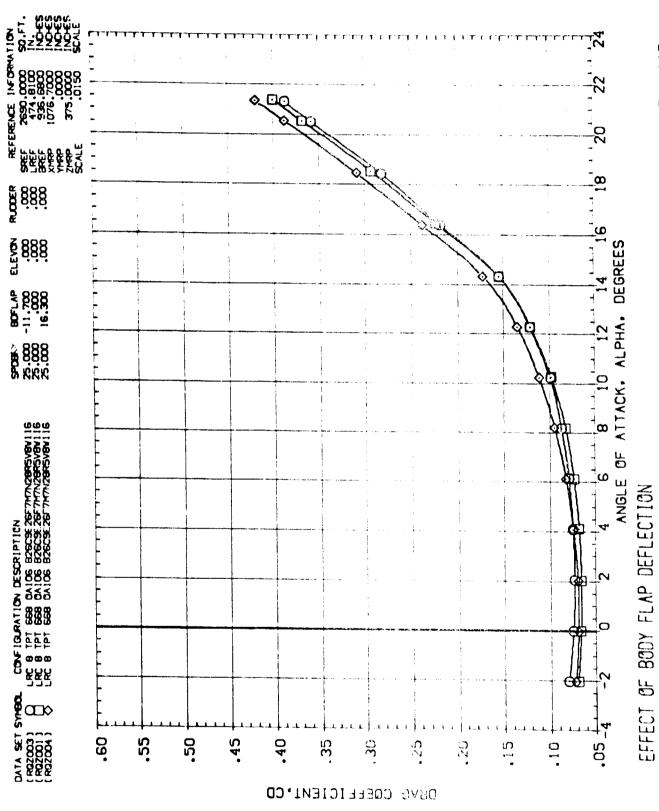


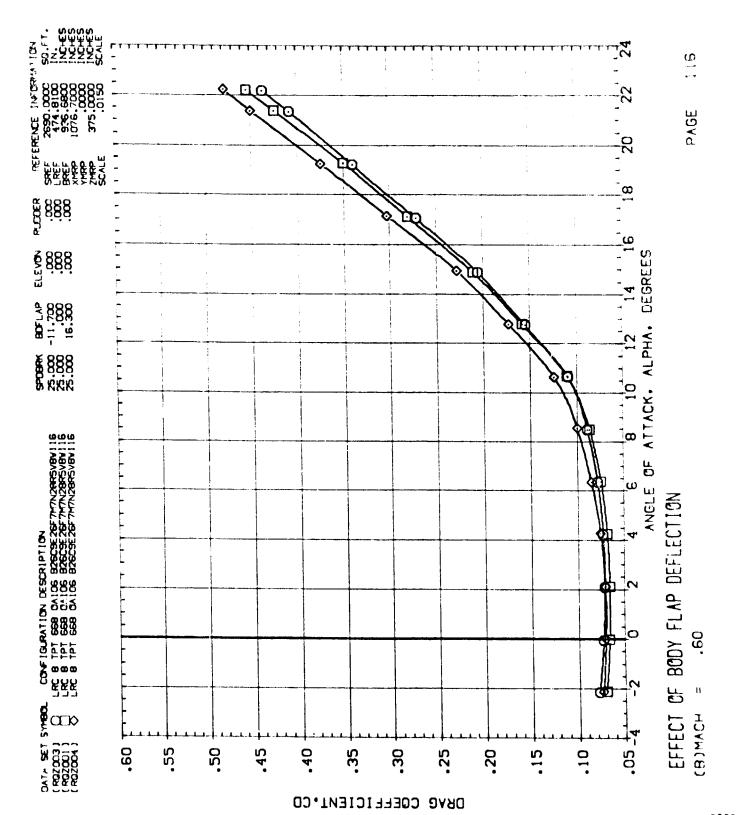
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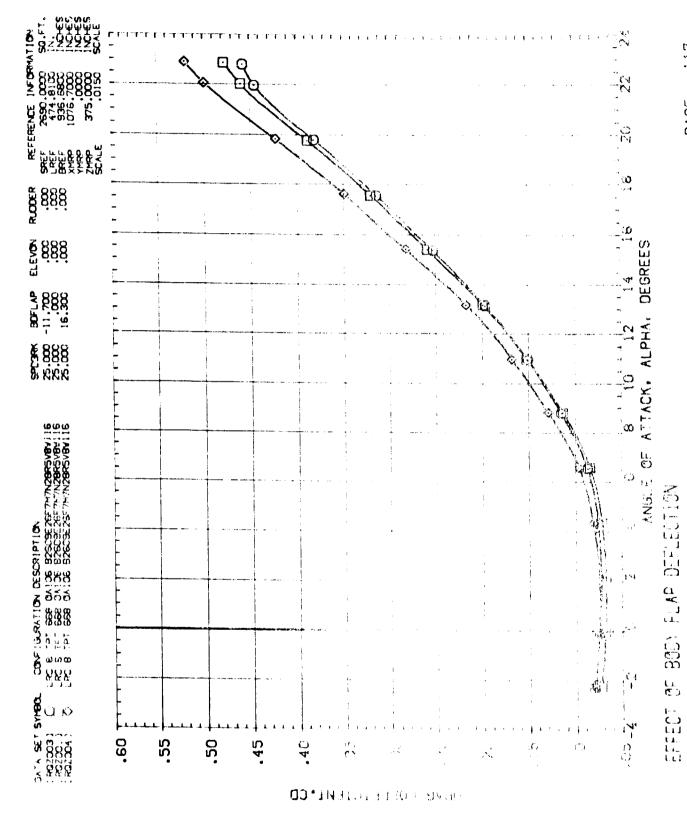
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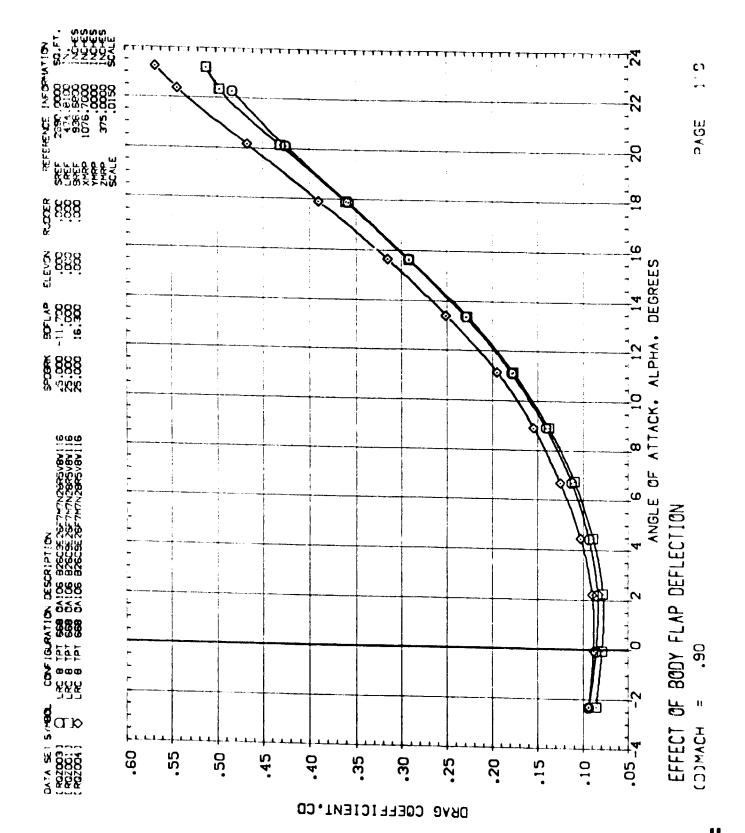




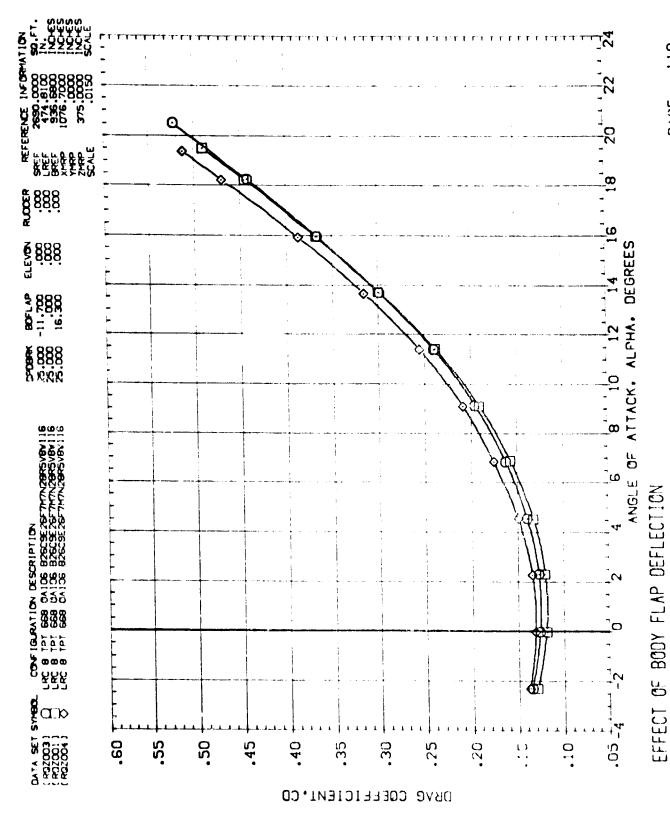
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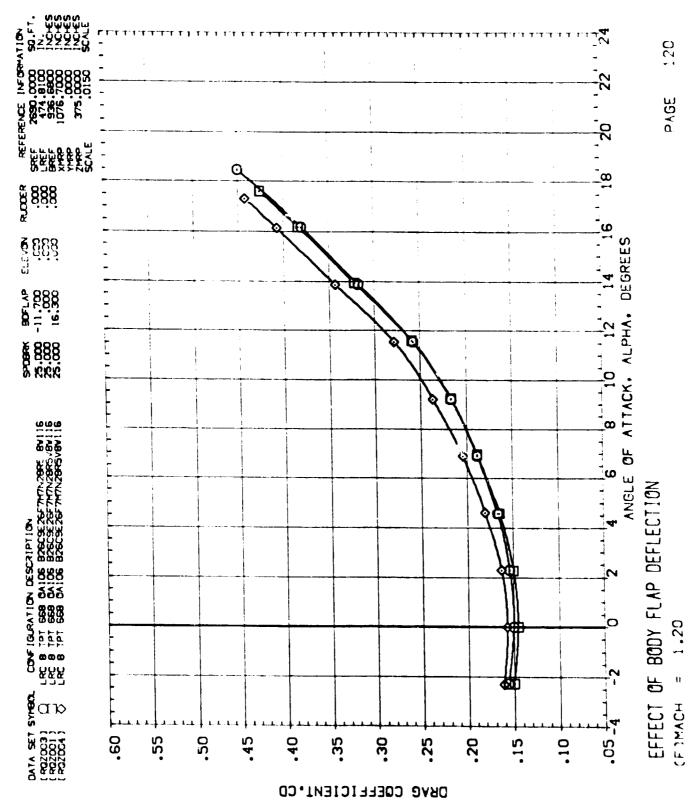




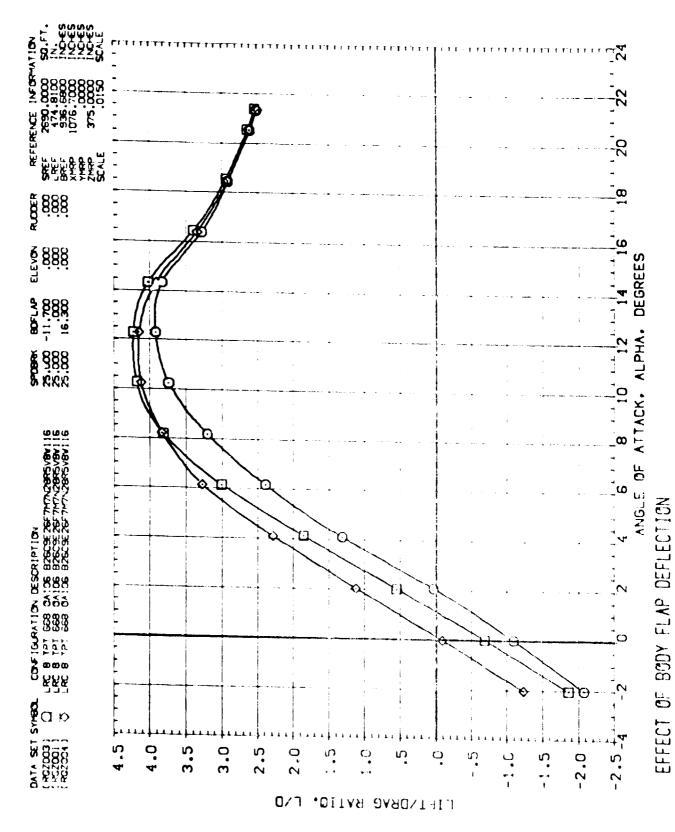
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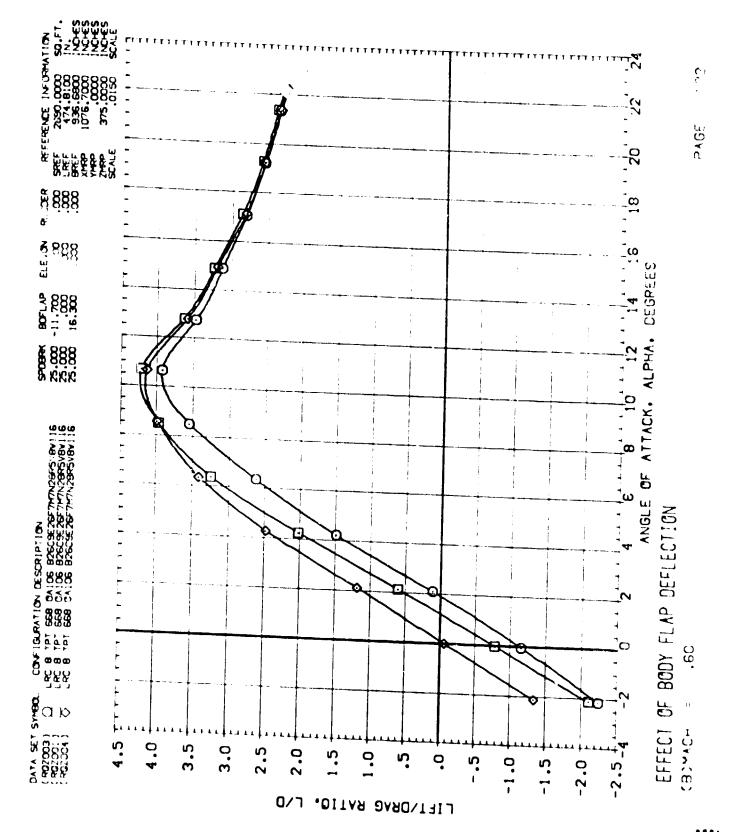


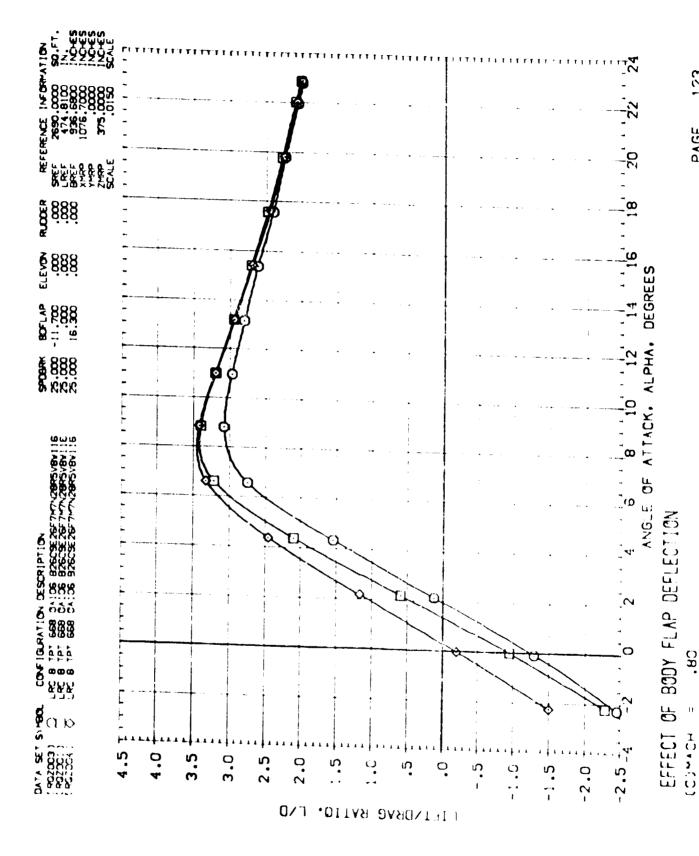
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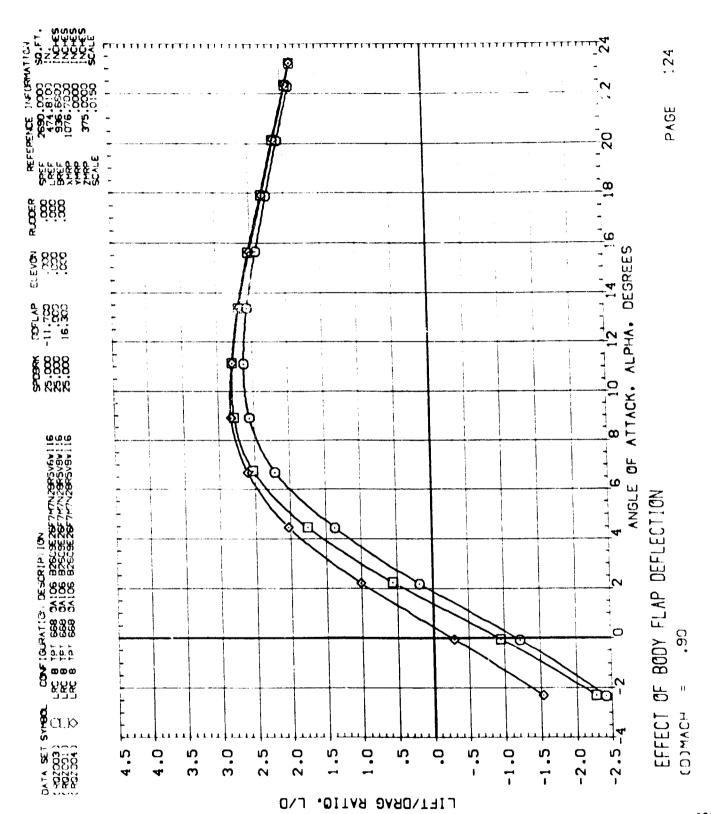


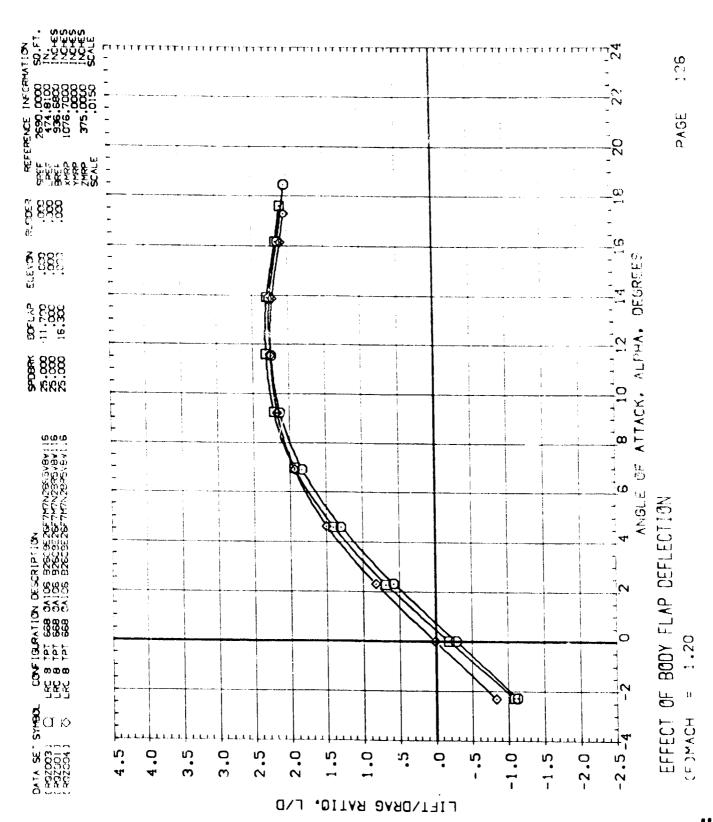
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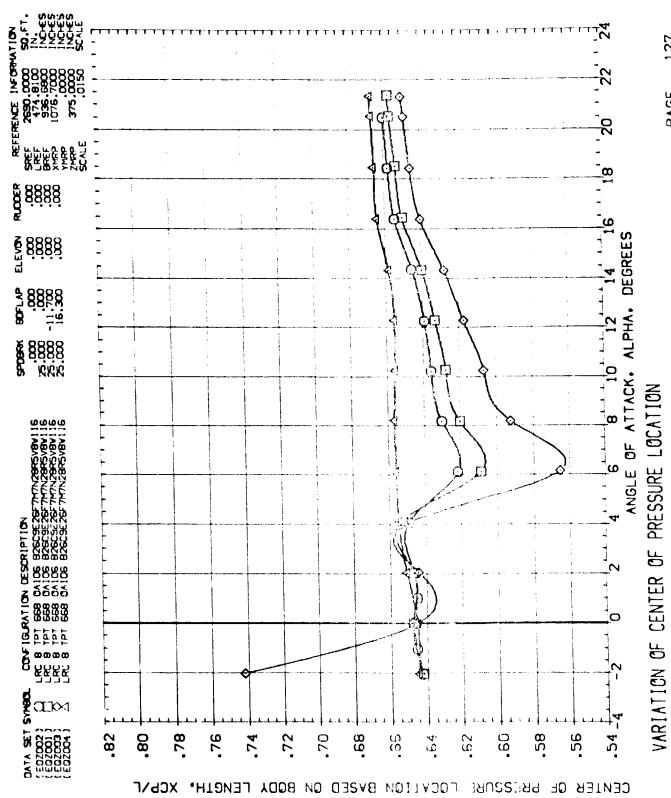


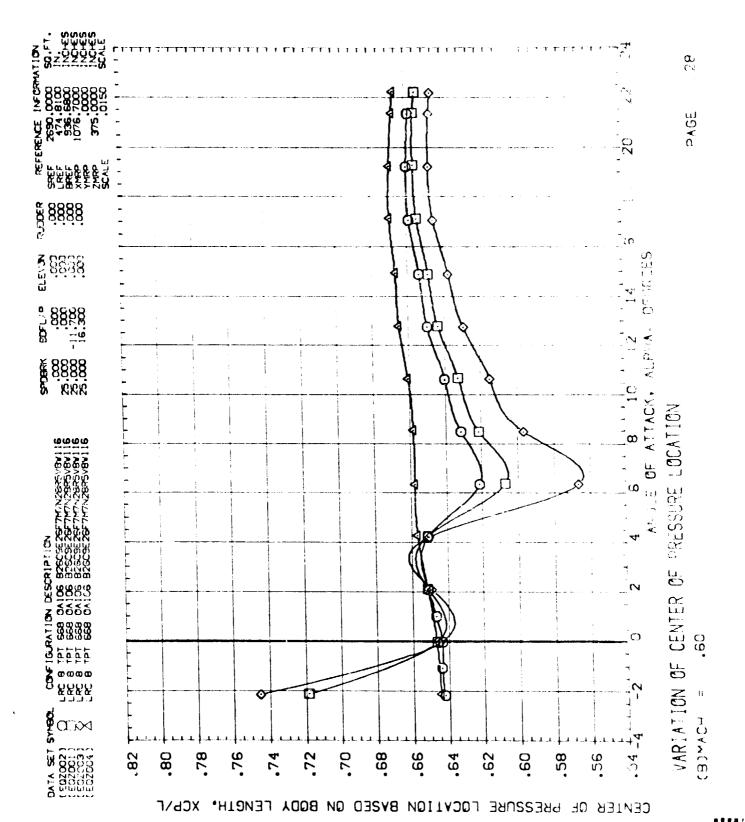




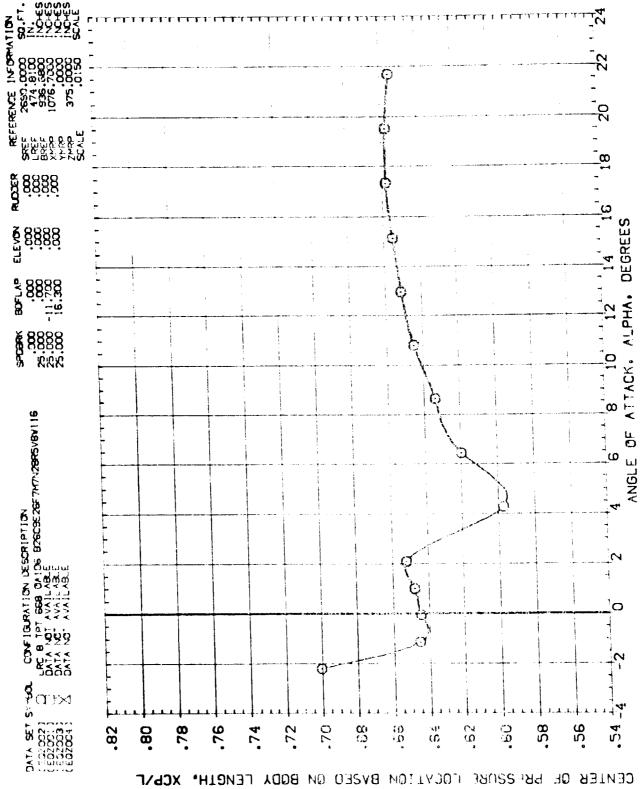


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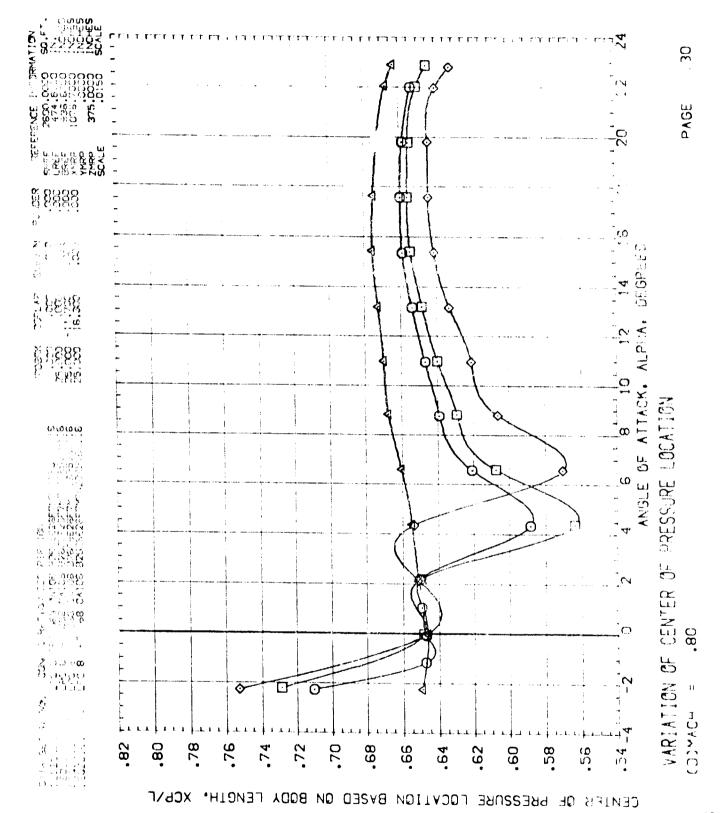


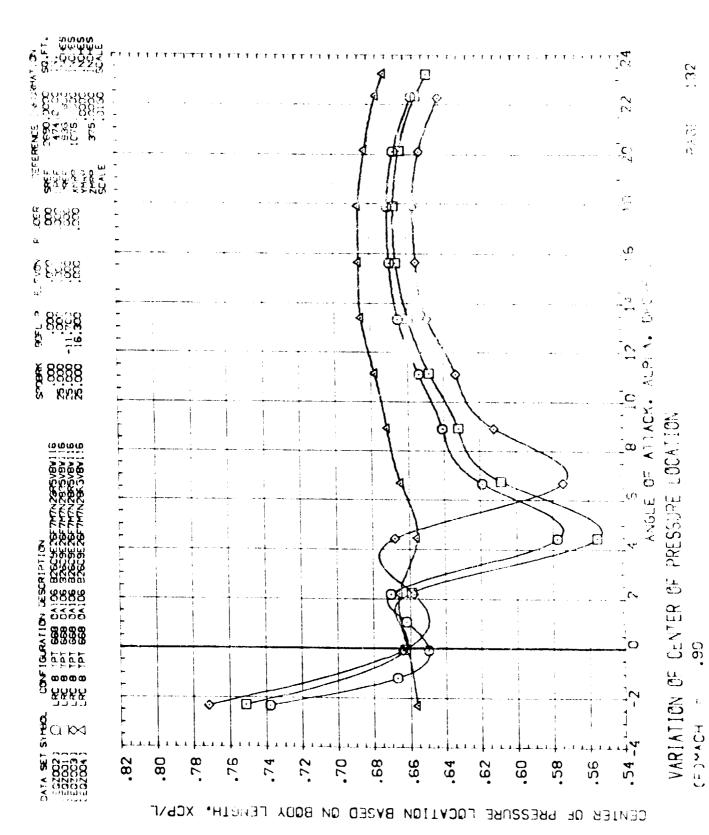




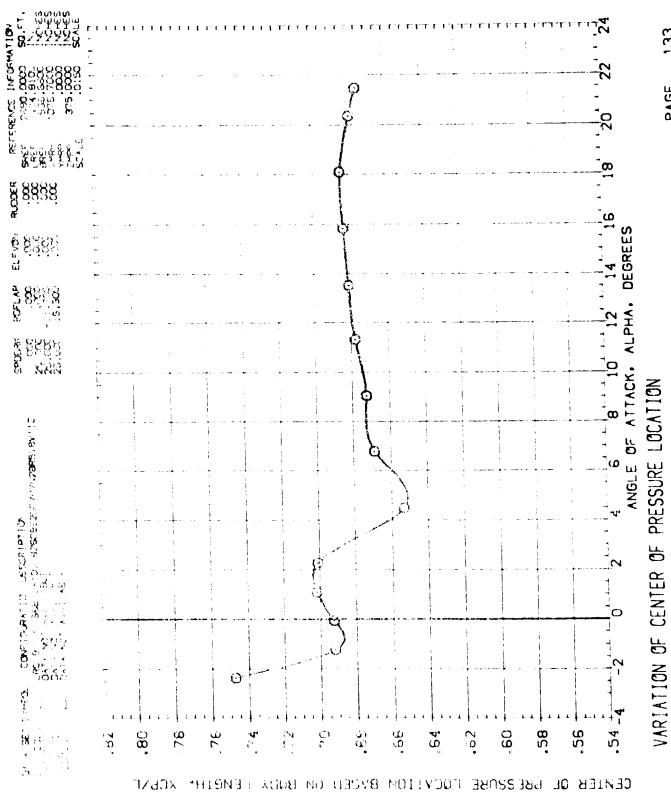


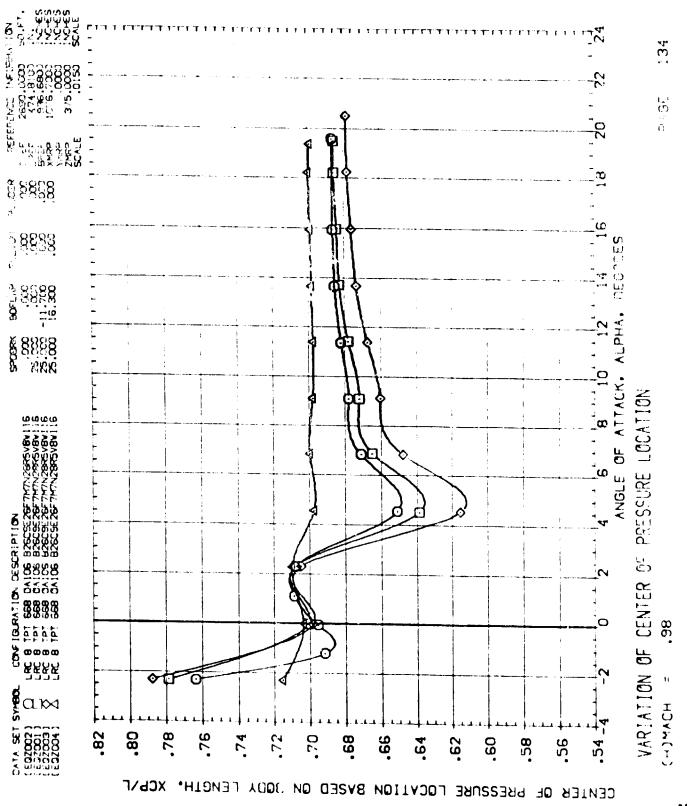
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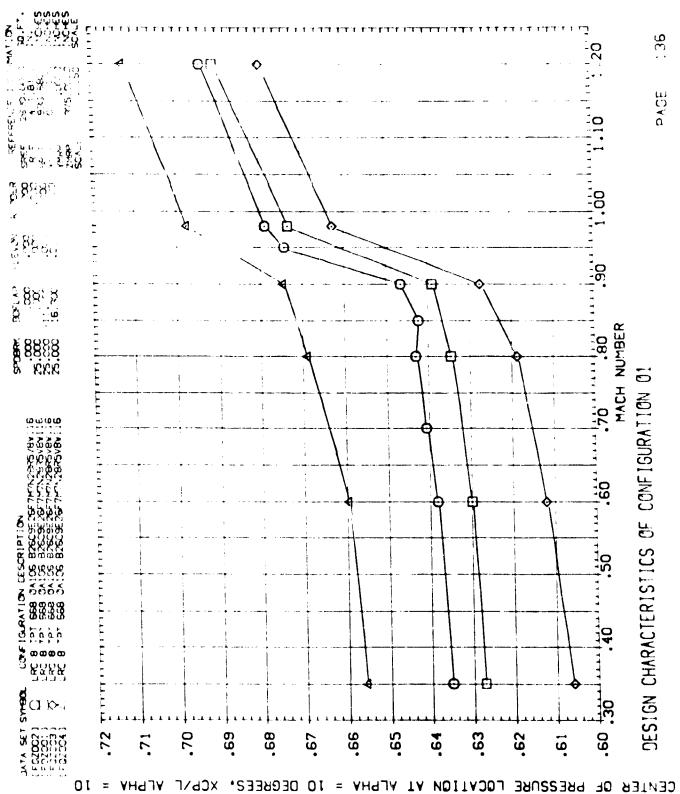
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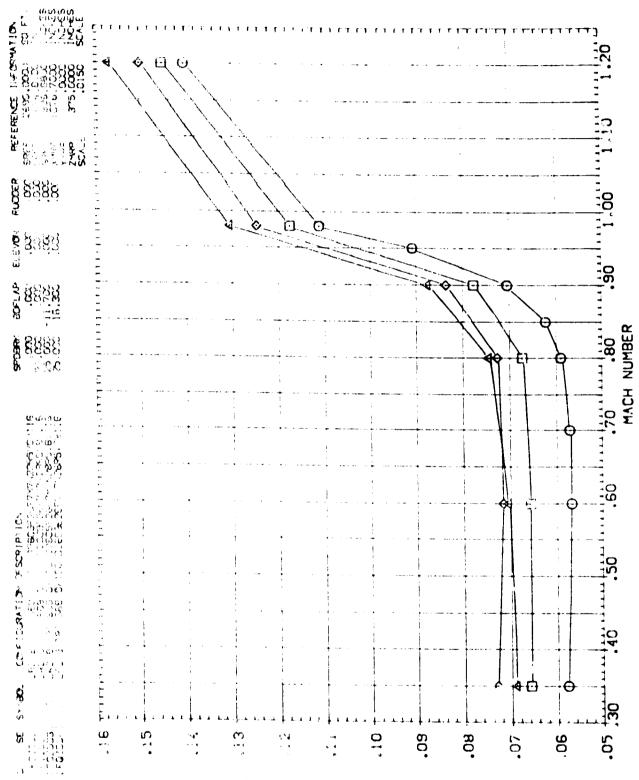


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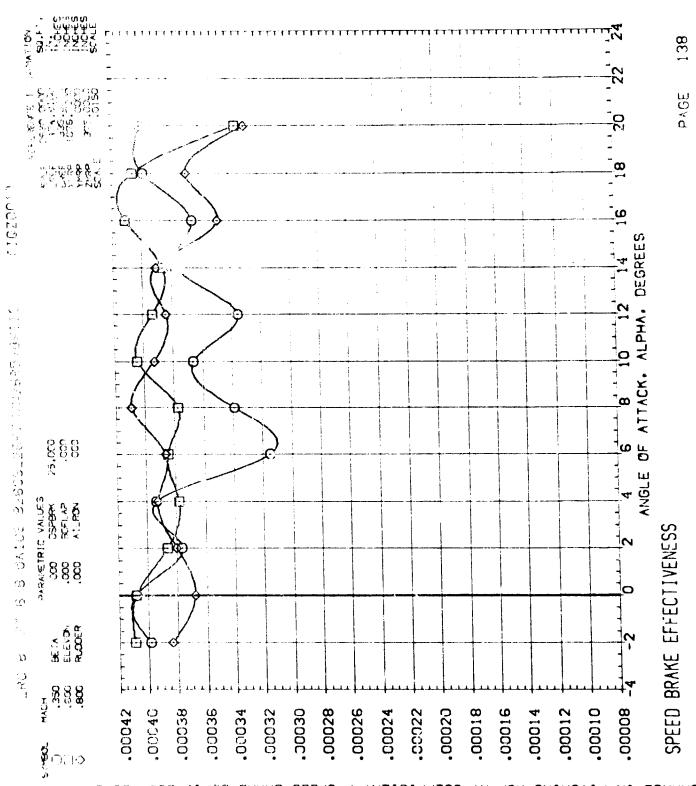




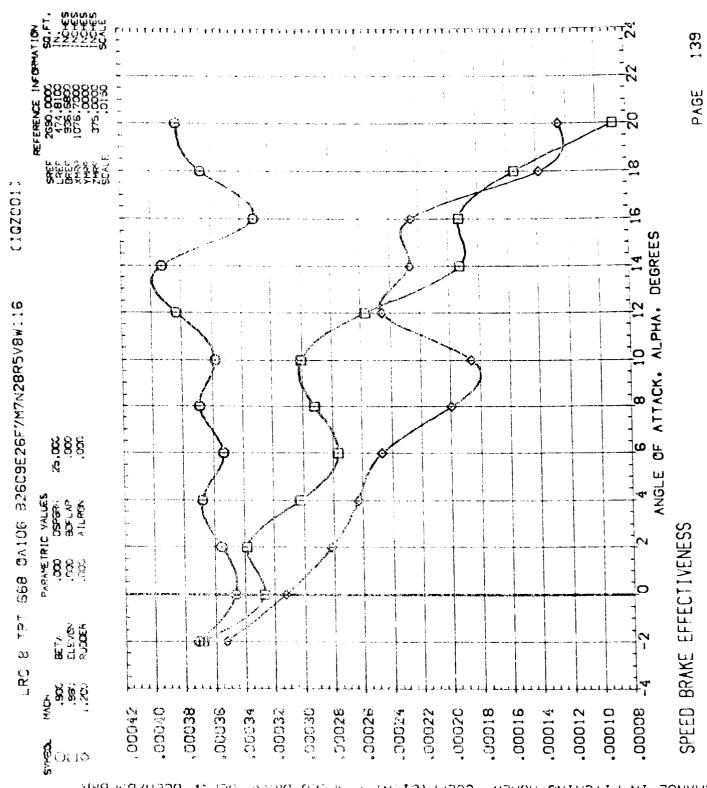
DESIGN CHARACTERISTICS OF CONFIGURATION 01



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CHYNGE IN BITCHING MOMENT COEFFICIENT / SPEED BRAKE DEF., DCLM/DSPBRK



CHYMPE IN BITCHING NOMEN. COEFFICIENT / SPEED BRAKE DEF. ** OCHMNDSPBBK

APPENDIX TABULATED SOURCE DATA

Tabulations of plotted data are available on request from Data Management Services.

DATE 11 WOV 74			TABULATED S	TABULATED SOURCE DATA, LARC 8 FT. TPT 668 (OALDS)	LARC 8 FT.	7PT 668 (OA106)			PACE	, ,
			LRC 8 TPT	LRC 8 TPT 666 CA106 B26C9EZ6FTWTNEBR3V8M16	26CSEZ6F7H1	NZBR SVBVA 1	ø.		(R02501)	47 VCN 80)	~ *
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(maz601) (06 NOV 74)

LRC 8 TPT 868 CALDS B26C9EZ6FTMTNZBR3V8M16

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(06 NOV 74) PARAMETRIC DATA LRC B TPT 668 CAIDS BZ6C9EZ6FWMR28R5V8M16

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DATE 11 140V 74

TABULATED SOURCE DATA, LARC 8 FT. TPT 668 (OAIDS)

LRC 8 TPT 668 CAIDS B28C9E26FTWTNEBR5V8W116

(R42092) (BR 140V 74)

PARAMETRIC DATA

C DATA	SPORK = .000 ELEVON = .000 ALRON = .000	.00 		.06624 3.4024 .07527 4.1728 .05031 4.52774 .11369 4.49476 .14312 4.21302		2092 -2 2085 -1 3739 -		.15175 5.44.531 .20515 5.35012 .27239 2.99917 .34241 2.64439 .41597 2.42077
PARAMETRIC DATA	90FLAP = .000 RUDGER = .000	5.00 C. 13531		0. 252536 0. 21450 0. 20330 1. 21148 1. 52925	. 95743 . 975743 . 04261			59285 .1 58913 .2 2 cress .2 5 crv3 .3
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DATE 11 NOV 74

LRC 8 TPT 668 CA106 B26C9E26FTHTNERRSVBL416

(AT VCM 80) (2002ER)

000. ..17752 3,38543 -2.44126 3.69796 2,74582 2.45114 L/D -2.48025 3.07090 2,79258 . 74726 -1.03776 3.62648 3.69 520 -.92087 -,11947 2.47409 -1.90819 2,53491 2.32407 2.12931 3.97741 2.29537 SPOBRK = ELEVON = ATLRON = PARAMETRIC DATA .05716 .06829 .08418 .22640 .29372 .36347 CD .06498 .03938 .03897 .06340 .14390 3147 .45483 .05742 .43229 -.00019 .0000. .05923 .07599 .23149 .10591 .03797 .16996 000. -.05329 -.00603 .04291 .15059 -.11218 -.06224 -.01047 .04289 .539 E2 .69 52 6 .80 649 .38993 .48682 .59278 .89388 .96848 .04783 37293 49519 .90910 .27558 . TO231 -.16118 BETA = RUDDER = GRADIENT INTERVAL = -5.00/ 5.00 ..00199 ..00210 ..00210 ..00107 .00108 .00185 CY .00061 -.00563 -.00202 -.00204 -.00126 .00014 -,00063 .00057 .00200 .002309 CY .00208 .76049 .0526. GRADIENT INTERVAL = .00044 .00045 .00003 .00049 .00008 .000030 .000030 .000030 .000030 CYN .00053 .00044 .00034 .00026 .00013 .00003 .00011 .00000 .00007 -.000083 -.00000-.00020 ,0001 4.00024 CBL .00043 .00073 .000102 .00102 .00003 .00003 ..00042 ..00121 .00299 -.00007 CEL .00002 .00108 .00137 .00145 .00144 .00135 .00120 .00044 .00124 2000 .00083 .00102 .00183 28/ 0 RWL = 3.51 27/ G RWL = 3.78 .00.00 .00.00 .00.52 CLM .G2103 .02166 .02237 .02294 .02213 -.01923 -.01457 .02693 .02707 .02758 .02783 .02669 .00457 -.00647 -.01758 -.02182 -.02201 -.00981 .01217 ...01009 .0000 1 NCHES ZMRP = 375,0000 INCHES WARE - 1076 FOOD INCHES .02890 16850. .03870 .05760 .05760 .04862 .05238 .05643 .05606 .05749 .05728 .05582 03950. A) .03955 .05975 5966 .05898 .05890 .00100 .03344 .03704 .04397 .04508 -,50151 YMRP = -.11343 -.06233 -.00942 .04306 -,15363 -,10138 -,05334 -,00582 . 92103 . 74385 .93555 .39134 .49945 .9 25 57.0.1 . 30 528 . 73025 .a5738 -.16362 .28246 97133 1. Z 3 .61173 04701 ر الح الح REPERENCE WATA 2507.0000 SQ.FT. 936.6800 INCHES .0130 SCALE ALMA -2.227 -1.134 -.056 1.010 17.346 19.527 21.680 1.015 8.776 474.8100 IN. 4.284 6.448 8.629 10.801 12.968 15,133 41.PHA -1.178 ..095 4.344 10.960 15.151 17,577 19.406 £ 5 8 LPEF = BREF = SCALE =

TO WAY

PACE 6

(RQZBS2) (B6 NOV 74)

PARAMETRIC DATA

	REFERENCE DATA	¥F.						PARA	PARAMETRIC DATA	41A	
			0000	0 1 1			BETA	11	3 000.	SPOSFK =	.000
μ	2690,0000 53.FT.		TOTAL MODE INCHES	Manual Services			B0F	BOFLAP =	3 000.	ELEVON =	000.
UREF = 474 SREF = 936 SCALE =	474.8100 IN. 936.6800 INCHES .0150 SCALE	E LYMZ	375.0000 INCHES	NCH55			10	1000ER =	۰ 000.	ATLRON =	000.
		ה אט. ה	26/ 0 RN/L	13,89	GRADI ENT	GRADIENT INTERVAL =	-5.00/	3.00			
	;	į	ŧ	3	Ē	ž	ő	ب	9	۲/0	
5 E	ACMIA	£)	2,690	03315	92 COO.	.00044	.00108	-,17515	06919		
169.	194	. 12263	0630	.03277	26000.	.00035	0001A	12128	.06562	•	
	160	-,06703	.06318	.03304	.00110	.00032	00107	£699u'-	.06329	•	
	1.032	01139	.06240	.03326	11100.	.00025	-,00176	61251	.56218	'	
158.	2,134	.04409	.06104	.03242	.00126	.00018	00094	er 140.	290.		
6	4.397	16770	.03624	.62807	OO: 100.	90000	00153	.16235	.06833		
	440.0	29130	05550	.01984	06000	61000	61000.	.28234	.58863		
188	6.815	20.00	.05705	.0121 /	.00238	.00015	\$ 0000	38382	.11726		
18	11.022	. 30184	.06045	.00364	.00117	£0000°-	.09204	.48102	.15529		
e.	13,235	.62495	.06446	01196	.00042	00009	66200.	. 59363	4.5.5.		
15.8	15.487	.75364	.06656	02302	.00024	00046	.00414	S 60 .	.26537		
e e	17.76	.96656	.0687	02758	00022	10000.	.00177	. º 5454	.32928.		
6	19.930	.98168	.0 6 886	02660	-,00014	00047	.95856.	19666	. 45530		
(F	72.127	1.06105	.07202	00769	00119	00053	.55554	.95573	.46636	2	
}	GRADI ENT	.05140	06000*-	00066	.00013	90000	00535	62060.	. 2000 -	. 73339	
		25 N	25/ 0 RW	RN/L = 3.97	GEAD! ENT	GRADIENT INTERVAL =	-5.05/	3.00			
		į	į	3	ē	2	5	٦	e	6/9	
Ð ≸	ALMA	Z	5	ברים כרים	2000	90000	0.00	64641.	07048	19 -2.41464	
906	-2.333	.19253	200	96.90	12100	0000	£2000°	JE 621	.07433	13 -1.74505	
96.	-1.208	-13164		\$4.00°	14100	00011	01000	07404	46 KO.	-1.02919	
98.	****		85010	04040	.00158	00016	00123	01430	50,0035	'	
8. 8	2.186	.03126	79690	.03688	.001 39	91000'-	55545	.04859	55 KO.		
	4.62	.1 6880	16890.	.03329	.00103	00025	4:000.	.16293	er 190.		
\$	6.663	.28831	16890.	.02440	99000.	00020	55063	.27937	.1019		
5	688.8	.40521	\$6690.	.01046	.00163	00029	.00113	\$\$695.	21.151.		
	11.110	. \$2216	.07218	00541	.00113	90011	.05213	43446	\$ K ::		
8	13.337	.63067	.07441	02631	₽ 6000.	00021	₽6833.	.61 59 5	.222 50		
66	15.634	. 73225	.07626	04147	.00035	00029	.05424	. 74239	.29694		
66	17.075	.91630	06.40.	04362	.00027	-,00045	.05554	24475	.35654		
669	20.116	1.02356	.04223	04462	.00033	005,75	₹ 9963.	.93242	.4292		
66	22.301	1.08627	.09741	01734	-,00109	55116	.01043	Va Ko.	. 49309	••	
•	CRADI ENT	.05362	00036	001 74	-,00003	.00003	-,55923	51.57.7.	CE 800.	39 .56673	

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(R32002) (06 NOV 74)

LRC 8 TPT 668 CAIDS 826C9E26FTMTN28R3V8M16

	000.	
DATA	SPOBRE = ELEVON = ALLRON =	
PARAMETRIC DATA	000.	
í	BETA = EDFLAP = RUDOER =	GRADIENT INTERML = -5.00/ 5.00
		4.03
	1076: 1076,7000 INCHES YMRP = ,0000 INCHES ZMRP = 375,0000 INCHES	RNL = 4.05
	1076.7 0. 375.0	24/ 0
	8 H H	
£	45M2	R K
ERENCE DATA	00C 53.FT. X 100 IN. Y 800 INCHES Z 190 SCALE	
REPER	2695.0000 474.6100 936.6800	
	11 H H	
	SCALE =	

		ج ج	24/ 0 RN	RN/L = 4.05		GRADIENT INTERVAL =	-9.00/	3.00		
ð	AL PHA	ž	5	1	é	N.	Շ	ಕ	e	Ŝ
Ø.6.	-2.368	19042	106.60	64060.	.001 76	C 000.	00182	18641	.10080	-1.84931
186.	-1.231	:22 52		.04226	2010 0.	06,000.	00212	12048	1.09627	-1.25150
186.	966	05216		.03443	.00185	.00049	-,00399	05205	.09245	56308
126.	1.030	.02006		.52522	.00187	.00021	00329	.01932	18 160.	.20017
.95:	2.251	58360.	\$ 1060.	.01429	.90181	- ,00002	00367	22260	19384	.98268
œs.	4.439	.22805		- ,05188	.00103	-,00046	4.0009	.22047	.10525	2.09491
Ø€.	6. 799	.36474		01837	.05140	-,00002	+.0005a	.35221	.12687	2.77622
S. 6.	9,632	.44565		02989	.00124	08000	000030	.46774	.15734	2.97289
36.6	11,337	. 61 341		-,04630	.00182	00031	00057	. 59 503	.20244	2.88388
Ŗ.	13,539	74247		0831	.00193	00219	.00064	. 70144	22.822.	2.71326
8 5.	15.854	60811-3.		07384	.95267	66132	00281	.82473	.32946	2.51095
186.	19,114	1.0146		71360.	.05204	0.290*-	90249	193491	40589	2.36310
6. B	25.363	1.12238		- ,019 775	.05197	360a0.	.00391	1.01929	A 73 3C	2.12661
Ø.€.	21.466	1.15949	.0347	078 G	.50128	# 000 -	CT 20.	1.04441	.51245	2.03905
	Grabiten:	.06131	000°-	F 957	-,00008	0001.	P0000.	0.5964	.00057	. 589 59
		3 3 4	23/ G RW.	60'* : "/	GRADI ENT	GRADIENT INTERVAL =	/60'\$	5.65		
₽	At PhiA	Š	5	3	ยี	N.	۲	ರ	e	2
990	-2.328	19395	.11357	56660.	.00109	55 100.	00357	19907		-1.55679
£6.	-1.197	12118	.11349	78080.	.90128	.00140	00426	11878		-1.02395
996.	054	05354	.11195	.04343	.90144	.00116	00464	05343	.11200	47710
000	100	71910	•	19610	8	00000	POV.00	ACE 10	11004	1

ĕ	A: PH		5	1 0	9	Z.	Շ	J	e	20
980	-2.329	19395	11367	3998	.00108	.00153	00337	10661	.12149	-1.55673
.940	-1.197		.::349	78080	.99128	00140	00426	11878	.11600	-1,02395
986.	054		.11195	.04343	.90144	.00116	00464	05343	.11200	47710
.940	1,00.5		.11059	.03283	.00162	66000.	00493	.01 706	11094	.15376
3€0	2.265		.11005	.02065	.00154	K000.	00424	57 690.	.11368	. 76923
Û₩6.	4.564		15831	090000	.00075	06000.	002 n	.22691	.12676	1.78923
.980	6.832		10501.	62188	.00110	.00041	00136	.36276	.19013	2.41622
146.	9.111		.10555	-,03851	.00132	000040	.00023	.48399	.18452	2.62299
.941	11.390		.10838	-,05525	.00100	25 000.	20106.	.60277	.23153	2.60342
.961	13.645		.11405	67427	\$6000.	21000.	.00403	. 72647	r.293.	2.47538
980	15.946		.11627	OH 680	.00155	.00045	00190	.84665	36294	2.33342
960	19.597	•	.12089	11164	.00128	02000.	.60351	1.0:990	.49145	2.07530
	GRADI ENT		000	00084	.0000.	0001a	\$1000.	.06033	24 000.	06864.

LRC & TPT 668 CAID& BZ6C9EZGFTWTHEBRSWFWIS

PARAHETRIC DATA

(Razooz) (08 NOV 74)

000. 000. .000 SHORR = .000 ELEVON = .000 ALLRON = BETA = SOFLAP = RUDDER = SAREY & 2000,0000 SQ.FT. NORP & 1070,7000 INCHES
LAREY & 474,8100 IN. YMRP & .0000 INCHES
GREY & 930,0000 INCHES ZMRP = 379,0000 INCHES
SCALE & .0130 SCALE REFERENCE DATA

	1,09237 -,66197 -,66197 -,70034 -,74043 1,99156 1,99156 2,36947 2,36947 2,11590
	.14576 .14136 .14042 .14184 .14184 .1937 .1937 .22267 .22267 .24203 .24203
3.00	. 18919 02131 02135 02135 03136 35476 35476 35476 35476 35476 35476
-5.96/	
GRADIENT INTERML =	.00124 .00113 .00094 .00017 .00066 .00041 .00065 .00041 .00065
GRADI ENT	.00124 .00124 .00135 .00136 .00136 .00122 .00024 .00024 .00027
= 4.22	CLM .05572 .0426 .02701 .01266026650268502684005139053400534010153
22/ 0 RWL =	CA .13909 .13956 .14104 .14104 .14101 .13796 .13796 .13796 .13796 .13796 .13796 .13796 .13796
Š	CN - 16499 - 02541 - 02541 - 02541 - 11333 - 11333 - 13414 - 30735 - 30735 - 30735 - 30735 - 30735 - 30735 - 30735 - 30735 - 05931 - 05947
	ALPHA -2.337 -1.190029 1.113 2.319 4.574 6.907 9.161 11.308 15.640 67.640
	# 002:1 002:

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. H H . H H	LRC B TPT 668 OAID6 B26C9E26TMM2GR3VBM16 REFERENCE DATA LEALLOCUE SALFT. WARP = 1076.750G [NCHES 474.8100 [N. PRR = 1000G [NCHES 674.8100 [N. PRR = 175.0100] [NCHES
	DATA T. XM. THR. ZES

		,								
i	3	į	4,	1	ยี	z U	ζ	ΰ	8	(۵
5	* C		€	F. 425.4	0000	1,0000	68000	-,16539	K & CO.	-2.07232
7	47.4	3 6	,		19000	\$00000.	-,00304	00105-	C 1513	-1,09117
7 1	3 1 1			44.62	61120	OC 500	0045:	05240	5.15TO.	.63296
2 2 1				() de	92100	00042	\$8500°-	55	20740.	1.31593
, i	N 0 N 1 N 1 N 1 N 1 N 1	1 1	3 3	C-\$ \$55	10142	- 500032	91	1.561	P: : 140.	2,39554
36.	F	F. C.	7 W W W	56.24C	P. 100.	- ,465285	48368	2 775 7	39866	3,253.50
<u>,</u>		· · · · · · · · · · · · · · · · · · ·	4 P . P .	1.4522	19:67	- ,50016	- 1995	38.00	::660	3.73942
i ;	*CV: 7 *		/ #1 - f- 1	1,434	100167	, 4500%	561110	. 64.45	.:5::	3,91923
	12.21				6.1	35,000	۲, 	146	15416	3.026.5
2	C 7 .			•:	2:100	0.000		. 3 684	* 44 4 E.	3,275.6
		4		.,	6000 0000	3	SE 3 () .	:\$42. ·	** : 61	2.015.74
,	2 4			,	\$ 1 00.	ř.		, v	3570	N. 50.4
		***			.00132	62.55		1.00	396%	2.502.2
<u>.</u>		1.6416		\$	\$1000.	6,777	¥ (5)	.5.4299	-,505.2	A C A A
		; 5			· ·		į	ī	5	0
Į. ¥	d d	Š	5	ع	Ē	z U	נ	ļ	3	1
9	4 5 6 4	12.41.	\$ 1.0°	.54614	. 555 6	.5005.	*× X1'-	: 7546	.0 M27	-2.24173
ý	6 4 0	218 82	£2029	0.440.	₽ €005.	61000.	00298	5° 504	SK C 0.	.1.16623
9	64.0	A7.05.2	, C		.09123	500000	00323	51500	45 KO.	.11392
	. A. A. A	11.431	5:490.	5, A 8 A 5	.50143	00015	1,00177	110925	\$0540.	1.43594
		89515	4 7 6 C	.04826	.00167	00011	6v356*-	.25.549	.0 mes	2.85
	44.5	32463	.04131	75757	.00188	10000	00043	.31499	94 660.	3.54974
8	10.642	44477	.52°23	.04239	.00142	\$4000.	64369; -	.43190	10944	3.93058
6	12.733	. 560.53	03230	71150.	.05252	84 DCO.	. G35.74	. 53959	.15516	3.47766
	168 11	.67523	.63329	.02362	.99129	51000.	.06215	.64452	r 202.	N.1.3076
	\$0.71	A0908.	3586	.01087	16000	2,000.	.50233	.76297	52 K3.	2.40434
	900	91210	03835	.00663	.00149	.00021	.00049	.96964	33385	2.55619
	21 142	1.542.96	£60£0.	OK 600.	.00244	.00001	eg.000.	18626.	\$2000	2.33116
	20, 62	5.5941.5	69620	.61263	.00149	00027	.50277	.99263	43750	2.2714
6					4.000			1447	SP11177 -	3696

AT 4CM 11 3TAO

LRC & TPT 666 CAIDE BZEC9EZEFTHTMEBR3VBW16

(F32003) (C6 NOV 74

PARAMETRIC DATA

637**:52**

REPERENCE DATA

43.00	¥	2.000 30.77.	4	**	1076, 7000 1 MCHES	BETA =	gc5.	E MASCAR DOS.
	н	NI OUT TA	4	**	.0000 INCHES	EDFLAP :	-11.700	i Noward
200		936.600 INCHES	2 42 6	11	CALE E 936.6600 INCHES ZWAP = 375,0000 INCHES	# 13000F	3977	P ACROS 4
\$C & !	μ	.01.90 SCALE						

		35	54/ O 78	SWE = 3.46	GRADI ENT	INTERVAL =	3.08	30.€		
ž	4	Ž	5	3	ยี	N.	۲	بح	e	9
				0.4649	68000	.00033	10000	-,135.53	.08111	-2.4477
3 3	2.5.7	20103.	7446	0.5745	10000	10000	06:75	67365	67.470.	-1,2940
	20.	0 to 10	94570	55450	.00147	00005	-,50296	:0030	29242.	.12*63
	888 4	B. 22.	£ 950	C567	.001 88	-,00022	- ,00122	745	19510.	1.347
2	24.	.24577	105887	.05334	.00186	00041	.05542	.23-41	51960	2.7449
? ;	r.	18684	14660	.04362	\$ 6200.	,0000a	- ,055 r ?	55866	111472	3.577
ç	K 03	467.47	99 290	03642	\$6100.	00044	50200	A4 750	35.35	2.97
	19:161	28123	, C.	.02696	.00129	00042	Sits	. 55099	.19646	2.7943
2	44.5.4	200	06849	5.50	18100.	00067	46150.	OB 659.	.25239	2 613
	17.568	. 1345	1110.	66210.	.00023	c:0000'-	.051 77	. 75405	.31333	2.406
	604	92439	0.07022	.01 492	,00C28	00073	96000.	. A 5029	.39074	2 2333
	886	1.01367	00000	.02A10	-,00096	-,000.53	88 £S:	.91573	.44525	2.0563
S. S.	808.25	1,01538	25890.	.05142	00099	000ea	.55264	C2806.	.45716	1,9392
	G. ADIENT	5 1633	4.0000	60000	\$ 1000	- COCOA	03523	F 1 50.	0.000	ှန.

		3	33.0	RWL =	8. S.	GADI ENT	INTERMIL =	-9.50/	3.00		
Ş	4		đ		¥	ยี	z S	Ü	ન	e	2
; ;		•	CAAC		60940	90104	20003	,55524	22619	59363	-2.41597
	£0.	•	0.00		22010.	.00144	.00016	CE 100.	10432	.09568	-1.21753
			1003		.06674	20100	10000	-,55292	.61941	.00333	.18348
	***		0.0032		.06332	\$1100.	00027	05113	.12932	34860.	1.37303
5	88.4		5.00		51550.	.0000	-,00041	.0006	.24914	.11266	2.21173
	4000		283		AC880.	.0C200	00034	£0:00.	\$609¢.	.14107	2.55966
\	***		40		02240	\$0100 .	-,00036	.00275	. 49348	16 KL 1.	2.62305
	36.5		20.		.00226	.000 66	00043	.00364	. 599.75	.23053	2.55949
§			080		.00384	.000 m	-,00061	.00447	PERS.	.2323:	2.42337
	0.00		9260		.01429	SE 000.	00037	44200	.80755	15927	2.75399
	4 C C C		560		.00341	.000	060000	.00323	. 48363	42537	2,07735
. §	F 2 22	1.030.67	₹66.55°		.02669	-,00024	00013	048710.	.91545	6;8.4.	1.4954:
}	CONTRACTOR	•	00.0		00185	50000.	60000'-	- ,55523	.05243	00015	. 56572

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A A - A - A - A	
2	
5	
(CD0ZC: .	PARAMETRIC DATA

000°. 000°.

PARAMETRIC DATA		-11.7	# NOVELY 020) # 120001#	
	1676. 7000 INCHES	= .0000 1NCHES	ZMCP = \$75,0000 INCHES	
	X	11	11 d'342	
REFERENCE DATA	SPECIAL SOUNDOUGH STIFT, WAS A 1676, MODD THOMES	LREF = 474,8100 IN.	BREF = 934,6800 INCHES	.519G SCALE
	ج	LART .	המנד המנד	SCALE .

ð	4 4 3	ξ	ΰ	₹ J	é	z S	δ	ť	9	2
386.	28.37	26.953	.12724	07729	11100.	.00141	-,00249	25063	.13544	-1.4012
34¢.	3.5	50600°-	.12550	€ 19: •	.00127	\$1100.	-,000452	6.0(co); -	127.92	5549
¥.		CTIATIO	.12412	3:0,0	75141	C 000	(6) 50 -	5 7314	.12714	.5752
7.5	7	: ::	1,225.	1808	20091	.99532	154235	25,643	.130 42	1.4905
() ()	98	.3. s.e.	12051.	.00215	.65:54	61000	1.100.	PAREN.	16224	2.09203
Š		4	21945	6 e \$; ; ; -	.05123	\$5050.	,¥000.	.4535:	.19554	2.370
£ 60.	11, 343	18910		6.102 F	.00107	C+0C0.	S. 177	£25.04	.24503	2.4173
<i>;</i> -	: 5.57	1.53.1.	* 700	* 7 + T	.0.414	.03413			.2.40A	2.354C
	19.57	• ¿.	4 , 277	7 47.	,50135	949.S.	39.5	108.201	.36434	2.2465
g 3	¥40.53	Sales Comment	K K TT	5544	60EUS.	W. 4.	K K S	rich:	44257	2.1095
· .	* 6. S.	2 to 16 1	:543:		★ 1 * 55.1.	:	C 8 6 1 1	2.53.53.5	£ 55.	1.976.1
	5	5000	a ∀ F ₁ ·	1,100,46	-,020%		- - -	3600	€ ¥ 500°	436.
		· · · · · · · · · · · · · · · · · · ·	31.6 5.4	5475 = 4,23	GRADIEM	GAOLENT LATERWY.	795*4- =	3.06		
ن خ	A. B.	₹	•	3	ξť	2	ડ	Ů	9	9/3
1.300	-2.2F3	5	€ 7.5 4 1.	r r	.07115	5°000.	037.51	17564	15637	-1.1232
3.5	ć	4. 4. 7F	\$], # *!	54407	.0013	.CO. 76	A 2 2 2 4 -	041 TO		2 702
Ę	2.33%	.09532	F 1	C1983	.00134	.00047	- , 35235	.09919	er 88 ::	£ 843.
Š	4.793	52912	.14476	00546	561150	.99024	00145	.23 643	.16663	1.2999
ĸ.	6.921	Session.	.14557	5.02935	.00124	.00C34	.,5004.	.345' 7	14946	1.736
30.	7.22.	.4:125	114 74	F.15411.7	575505	. 35526	.0.71	14845	91312.	2.1315
30	:	.6:391	į	- 05345	. CG2: 7	CB0057	90200	. 5ª5C3	.25773	2.2 955
.133	13.402	£271.	1,1354.	* . G 78.37	.00517	,C.C.	0 0. 00.	81 L	.31 731	2.2611
35	16.143	921 88	.13406	5 4 6 6 D 1 -	.00033	170554	C# \$ 36.	.41363	1.0TE.	2.14194
3	14.447	1.61226	CANCT.	- , C9A #3	+ ,GGG1 +	OK 676.	150437	1316T	49034	2.0355
			;							

(Ra2004) (66 NOV 74)

LAC 8 TPT 638 CA106 DEGC9E2SFTMTM28R5V8W116

11 11	2690.0000 80.FT.	SARP SARP	1076. 7000 INCHES	1 NCHES			95.74	"	000		000
,,		e Gay						٠ (200
BKEF = 936		1 dy.2	375.0000 1NCHES	JODGO INCHES			os S	รอค า. ห ระการ	16.300 CU	۱۱۰۵ ۰ مارون ۱۱۰۵ ۰ مارون	260.
4											
	-	20 KJ.	12, 0 RN	RNL = 2.05	GRADIEN	GRADIENT INTERVE	/00'5- =	8.00			
1	i i	ž	5	1	Cel	ž	٤	Ü	е	9	
	640.5-	06190 -	56890.	-,00299	99000.	00027	.00314	08A 73	.07221	-1,22944	
249	- 013	-,10043	06930	00182	06000	00048	.00136	-,55641	.06030	-,09253	
0	2,029	.080	.06691	05 22	.00124	99000'-	.00968	025d J.	.0ea 72	1.12170	
545	160.4	.17560	.06228	00242	.00133	- ,000 38	GT 000	RRT.	.07467	2.29.622	
646	6.147	.27661	.05289	00457	.05140	-,000	or 100.	.26735	.09221	3.27654	
	8.715	3.25	.04180	00652	.001 55	-,500552	96200.	36292	.09461	3.83476	
	10.245	47 48	.02803	15700	.00166	090 30	.00423	.45794	.11143	4.11992	
	12.27	57442	.01287	£66C3*-	.00181	00039	15505.	55954	.13472	4.14591	
	14.345	69374	£0000.	01568	.20143	41000	.99425	.67210	.17.90	3,95995	
	16.406	,83156	.05327	03250	.001 76	09047	525 525	79673	.23401	3.34772	
380	18.464	95238	.00758	04039	.00141	- ,550,43	.50369	\$6036.	30392	2.91739	
9	23.364	1,07012	15600.	04905	.00153	00506	£200°	1,00705	Sarris.		
K.	21,356	1.12542	.01017	05248	.00049	-,0001	.00136	1.54537	.41969	C	
	GRADI ENT	.04335	00110	11000.	.0001	00000	-,055560	.04214	£000.	. 57422	
	•	R'N NJ.	41/0 RN	RN/L = 3.17	GRADIEN	GRADIENT INTERVAL =	/gr s-	3.00			
3	ď	Ž	4	X	é	ž	۲	ರ	е	5	
	-2.136	10211	.0 7024	00370	74 0000.	- ,00006	.00264	09942	.07405	-1,34355	
6	-,001	00456	197.04	-,00250	.50112	000030	.00091	00456	.07081	06437	
664	-	.08 ens	.0678B	00231	.00122	.0003.5	00048	.03444	sono.	1.19.93	
. 399		.19244	.06161	95500	.00146	00047	41100.	.18730	C 570.	2.47126	
533	6,339	.29831	.05247	00636	.Cu1 58	00040	£0003°	.23066	.09519	3.41212	
666	8.558	4092B	A 650.	00919	.00178	00035	90800	33834	.10001	3.93814	
. 399	10.644	. 529 51	.02732	-,01525	.00134	.00033	.00230	. 51536	.12465	4.13444	
199	12.77	.64461	.03122	02679	.00244	01000.	.00275	. 62175	.1 7501	3,59375	
539	14.939	.76401	.03225	03459	.00143	000 3 0	.09607	78837	.22911	3.19959	
000	17.151	90206.	63880.	04796	.00054	00038	.00556	.93065	.35240	2.21111	
. 599	19.258	1.02292	66855	05318	76000.	00043	.00612	.952P2	.37419		
. 600	21.393	1.14131	.03625	05332	.00194	- ,000 \$9	.50480	1.64946	. 45005		
8	22.242	1.17993	.03510	05152	.00117	00057	.60413	1.67395	.47312	2.25170	

	ţ									70.00	,
			LRC 8 TP	LRC 8 TPT 668 CAID6 826C9E26F717N28R3V6W18	82 6 C9 E26F7	17128R 5V8W 1	₩		מי מ		
	REFERENCE DATA	¥						8	PARAMETRIC DATA	¥	
SREF : 1935	1956.3388 3 3.FT .	T CAC	1076.7000 INCHES	INCHES			9ETA	14 1	s 000.	SPOPRK = 2	250.65
LAEF = 474	474.8100 1N.	4 MAP 11	SECTION INCHES	I MCHES			9 9 8				200.
H H			2000								
		Š.	45/0 RN	RNL = 3.78	GRADIENT	GRADIENT INTERVAL =	-9.00/	5.09			
3	d	č	đ	x	ē	Z	Շ	ಕ	8	2	
Ser.	-2.237	12200	78430	20100 -	.00001	.00003	.00169	.11900	806±0.	1	
00e.	- 033	01547	57570.	00114	.00113	-,50028	.00118	01538	57570.		
.800	2.157	.59049	.07 62	50024	.00140	DDD38	,00017	52.80.	.07497	1.17025	
609.	4.379	.25416	.66551	- ,00266	.00167	-,05947	00012	.19857	10080.	2.45421	
000.	6, 853	.3285.	.15874	42600'-	26100	05055	160001	.31957	539612		
508.	9.95C	. 45335	29 62 D'	52133	.00231	00025	.5100.	43083	.12843		
200°.	10.954	. 55874	.06247	-,0239.7	50200	- ,000 t	96200.	.53657	15798		
00°.	13.199	.571.45	68289*	- ,54136	.00132	05101	.00431	.639.67	.21746		
.e.	15,430	96556.	G2 CX D.	-,03522	.00130	-,00130	.99564	. 75915	.2924		
36.	17,635	27.76.	.0746	୍ ିଶେ ଅନ	70000	27.000	.05264	.951.48	.34939		
706.	19.947	1,03901	.0749.	. 06303	00000	00122	7 65 00.	.05185	.4232	2.24993	
1 L	996	1,14598	.0758€	70530	-,5500	00112	.50394	1,52891	49999	••	
CC a	55.90	1.15742	.07522	D.tD41	96000-	-,00116	.00494	1.03694	. 51994	-	
	GRADIENT	.04921	-,00139	95915	£ 1000.	- ,05558	- ,00023	.64791	.00022	. G 1126	
		ું	397 B 3NL	76 = 3.97	GRADI EN	GRADIENT INTERVAL =	-5,05/	5.00			
		į	į	;	ē	2	č	ď	е	2	
Į. ¥	ALFHA	z .	4	F (1)	กกกุลส	61000	60119	14356	AS 5.03.	-1,528.72	
DDE:	5.543	- 12580	08936	657.00	.00142	4.0000.	.96031	02573	.09838	-,29109	
ICE.	402.9	09494	553-80,	.00258	.00167	05022	00162	.03144	01060.	1.01497	
006	4.456	.21646	.08616	03326	.90144	-,00042	52000.	2003.	1027	2,03397	
206.	CCF. S	.33951	.08655	01332	.55123	50545	.00134	.32659	.12552		
906.	8.915	45490	708 80.	02692	,00204	-,000.65	*020G*	.43622	.15454		
906.	11.145	76075.	.08622	-,04356	.00154	00033	.00389	. 54353	19495		
Luca.	13.414	.71274	.08854		75000.	00064	.00537	.67276	.25147		
37.46	15.654	.84668	09040	00332	r 000.	00101	.05.591	68064	06818.	2.30677	
1.06.	17.929	.9 1323	.09275	09 601	.0003.5	00081	.55612	51506.	99656.	20116.2	
8.	20.172	1.09403	.09614	59484	.00065	- ,00109	2400.	.393.7	16731		
000.	22.378	1.17986	.10164	09041	-,00083	00062	est 00.	1.05231	54319		
888.	23.237	1.19680	.10277	06753	00144	00031	.05952	1.05917	. 56662	-	
	GRADI ENT	27550.	- ,00029	00198	.0000A	60000' -	00014	.05210	62100.	. 3358	

(ROZDO4) (D6 NOV 74)

LRC 8 TPT 668 CA106 B26C9E26FTMTMEBR3VRW16

1 S	800-144 - 16.300 ELEVEN000 8.000ER000 ALLREN000	GRADIENT INTERVAL = -5.00/ 5.00	CEL CYN CY CL CD L/O COUTT	
REFERENCE DATA	SPEF = 2690,0000 50.FT. NAP = 1076.7000 INCHES LREF = 474.8100 IN. YMP = .0000 INCHES BREF = 936.6600 INCHES ZMRP = 375.0000 INCHES JCALE = .0150 SCALE	RUN NO. 38/ 0 RN/L = 4.09 G	CA CLM 1.13140 .02747 1.13140 .02747 1.12920 .01334 1.12920 .01334 1.12932 .01354 1.1294 .00354 1.12952 .10562 1.1254 .00354 1.1352 .10699 1.13152 .10699 1.13152 .10699 1.13154 .00926 1.1316 .00926 2.13174 .0279 2.13774 .0279 2.13774 .0279 2.13774 .0279 2.13776 .09691 2.13777 .10669 2.13778 .03699 2.13778 .03699 2.13778 .03699 2.13778 .10669 2.13778 .10669 2.13778 .10669 2.13778 .10669 2.13778 .10669 2.13778 .10669	00125 .0002701350



TABULATED SOURCE DATA, LARC 6 FT. TPT 668 (CA106)

(RQZ101) (30 JAN 74)

PARAMETRIC DATA

PAGE 15

25.000 .000.

LRC 8 TPT 668 CAIDS SZGC9EZGFTMTNESRSV8M16

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1 ATER WAL
GRADI ENT
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E	23611	-,23085	-,22461	22020	21170	2011	21101	22521	24275	27008	29739	-, 32614	33506	D0264		GRADIENT INTERMAL =	8	-,24749	2407	-,23654	22452	-,21996	21720	226!3	-,24980	27391	30312	-,33552	- 363 A	-,37645	.00287
ß	20474	20378	\$6002.			46261.	19543				25692	28656	29749	90,00		3.17 GRAD	£	22106	21706	21384	.20981	20618	20515	DK 602	22451	24139	26962	29758	32297	-,33545	£ 100.
5	50.02	2044B				19006			_	OC #25.					500	ווארר = 3	Ē	20041	- 21820	21443	£6602	-,20407	- 20196	6490%	22198	-,24111	-,26929	23694	32242	33433	96100.
	יי עריין אריין	900	•							16 461	674	944 06	F	11:11	*cool En	20/02	3	ארוזא אייי	- 1.25 - 1.26	2000	25.13 4 25.4	6. 38A			12.730	14.498	17.123	19.291	24 JA3	22 228	ZRADI ENT
		? ;	2 :	100		2 6	200			, E		? .			Š	7. S. N.	(£ (100	8 6	8 6				8	66		50		3	Ĭ

(ROZ101) (30 JAN 74)

23.000 .000 .005

.000 SPOBTK : .000 ELEVON : .000 AILRON :

BETA = BOPLAP = RUCOE? =

SREF = 2890.0000 SO.FT. WRR = 1076.7000 INCHES LIGE = 474.8100 INCHES YMR = .0000 INCHES GREF = 939.680U INCHES ZMRP = 375.0050U INCHES SCALE = .0130 SCALE

REPERENCE DATA

PARAMETRIC DATA LRC 8 TPT 668 CA106 B26C9E26F7MTNEBR5V8M16

	8	00000.	20000.	06660.	00000	00000.	,00000	00000	00000	00000	00000	.09090	50000	acces.	cassa.		£	cacaa.	00000	20000.	50000	20000.	DCCC4.	00500.	.50005	00000	66565.	. თენინ	, 50500	00000.	000000
90.8 100	£.	ეიი ი.	330GQ*	G0000°	1000.	30000.	36636.	20000	00000	J0000:	00000	66666	നാരവ.	00000	. 2555	30. \$.05	3	00000	00000	.00000	.56569	36560.	GGOGG.	,55596	.55550	.00000	.05555	50550	36360.	C1000.	35555
VAL = -5.00/	CF4	50005.	00003	00000	0 0000	00000	00800	00000	00000	00000	00530	0.0000	J0770.	accan.	55555	2 VAL = -5,00/	4	000000	00000	00000	00000	06660	200000	30365.	,0000°.	00000	00565	20000	.00 00 .	5000°	33730.
GRADIENT INTERVAL =	Ê	24330	-,23438	22608	21860	21387	21960	-,23410	26039	29568	32788	-,36131	-,40918	42100	.00374	GRADIENT INTERVAL =	Ē	26126	24947	23836	-,23345	22843	23491	24989	26973	30241	-,33204	37490	44325	46274	.00419
ŝ																															
3.77	g	22292	21537	1.20397	20529	20285	20694	- ,21921	23908	26797	29444	32303	-,37512	-,39052	.09265	3.97 GR	Š	24420	. 23291	22329	21839	21762	22244	23716	25973	FT 645	31946	35635	42453	44887	.50363
	Ces	2251222292	2175721537	•	•		•						Ì	58095 77785			2d)	639		•					·	·	•	•	-,42345 -,42453	44991 44887	59503. 50407.
19, G RN/L = 3,77		22512 -	21757	21128	20427	19943	- 20230	21412	-,23554	26443	24941	31945	36752	38777	£ 1500.	187 0 RWL = 3.97		24639	23524	-,22521	21915	21610	- 21695	22882	24953	27.73	30722	.35020	42345	•	
RNL = 3,77	5	2.22622512 -	21757 -	2,13921128	4.38120427	6, 58.5	6.91320230	11.00521412	13,18823554	15.42026443	17.59529.981	19.76831945	22.32836752	22.95438777	GRADIENT DESIS	RWL = 3.97	£	-2.32124639	04423524	2,223 -,22521	4,44721915	6.75821610	8.904 - 21685	11.14922882	13.37024953	15.644 27#73	17.92130722	20.13335020	22.36042345	44991	.00407

TABULATED SOURCE DATA, LARC 8 FT. TPT 668 (DAIDS)

LRC 8 TPT 648 CAIDS SZECSEZEFTHTNERRSVOMIS

	25.000 000.		
DATA	SPOBRK = ELEVON =		
PARAMETRIC DATA	000.		00000.
	BETA = EDFLAP = RUDDER =	90'\$ /0	.00000 .00000 .00000
		WL = -5.0	00000°
		GRADIENT INTERML = -5,00/ 5,00	CPS 35008 32942 31992
		4.08 G	CPE -,53845 -,32181 -,31435
	1076,7000 INCHES .0000 INCHES 375,0000 INCHES	באר =	CP1 -,32993 -,32269
	14 11 11	0 /11	-2.307 014 2.363
DATA	T. YARP ES YARP ES ZARP	R. N.	404 1981 1980 1980
PEFERENCE DATA	474.8100 1NCHES 936.6800 1NCHES 0190 SCALE		
	SREF = SREF = SCALE =		

.32269 .31498 .31640	
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45 .00330	4
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,	£ 5376653
17442812	
	0016900172

(ROZ152) (35 JAN 74)

999. SPOSRK = ELEVON = ALLRON = PARAMETRIC DATA 2000. 2000. 8514 5 90F1 4F 5 9000EE 9 IRC 8 TPT 668 CAIDS B26C9EZ6F7WTNERRESSMISS MARP = 1076,7000 INCHES
THEP = .0000 INCHES
ZHEP = 375,0000 INCHES SARE = 2690,0000 90.FT.

LREF = 474.9100 :NCHES

DARF = 936.6800 INCHES

SCALE = .0190 SCALE REPERENCE DATA

	Cibe	00000.	00000	. 99509	00000	00000	יייייייייייייייייייייייייייייייייייייי	65000	00000	20000	00000	50000	00000	00000	20000	1.000.	,		8		ממשט.	ancido.	00000	00000.	55556	00500	190000	. 55,000	accos.	00000	coese.	.00000	60000.	1905	36960.	
75,7 10	\$a 0	5000	בסמב.	00000			11.00	oppor.	Section.	Control of	2000	מממטי.		1	6000	10000		90.8 /06	č		20000	00000	00000	50000	20202	00000	0000C	.00000	20000.	30000.	06969,	00000	30005	00606	00656	
VAL = -5.00/	CP4	50000	00000	00000	י מינים מינים	oneno.	50.000	00000	20050	00000	ronno.	מסטים.	יייייייייייייייייייייייייייייייייייייי			1955D.	0000 0	100'5 2'00'	į	P ₄	00000	30000.	99090	65566.	000000	00000	60000	00000	55550	25000.	00000	ാട്ടാര	20020	20000	56335	
GRADIEI F INTERVAL =	8	64.61	80101		01961.	19027	18699	18319	17782	17419	1 7801	19890	23.544	26360	29534	2 TR17	96100	GRADIENT INTERVAL =		5	20 764	-,20492	20321	20134	71991	19447	11901	18916	-,19404	21803	74867	2649	10000	21.23030	8 0200	201
2.08 GRA	à	100	66361	20191	-,18219	18122	17938	17795	17544	1746	17758	L.1937	- 19315	21025	23265	26295	£ 000.	3.17 GR		<u>ي</u>	19933	19699	19747	19492	193n	19012	18832	1996	19181	1000C	22.444	20032	550K2'-	305.5	\$6163'- \$1100	66 100.
RNC =	į	<u>.</u>	19558	18477	18351	19302	18164	17674	1 7029	16757	16939	91671	19272	21209	23343	26063	.00136	i la	! !	£	- 20301	- 20061	F 1000	10754	0.630	19089	44781 -	0000	03301		DACA31-	- : 22 093	25322	400KZ, 1	. 50225	.00192
30, 6	. (H	-2.064	-1.03E	028	.983	2.027	4.064	6,135	k 1. 8	10.235	12.263	14,351	16.394	18.449	26. 25.1	GRADIE'S	6		AL PHA	27 1. 0.	100		# CO	6.00° C	, . , .	600.4	fr: 1	r 4. 6	10.9	12.763	14.902	17.054	19.217	21.354	GRAD1 FINT
2 N N N N		₹ ¥	8.	26.5	3.30	350	.351	350	.351	.331	335	ger.	355.	CK 6.	350	343		i	3	1		cec.	560.	666.	986.	000	66C .	r.	£65°.	664	. 539	. 599	. 594	.601	663.	



REFERENCE DATA

(#02102) (30 JAN 74)

PARAMETRIC DATA

LRC & TPT 668 CAIDS B2649526FTMTM26R5V6M16

000.	3 6																																				
SPOBRK =	#11 GON #	1																																			
000.	88.	25.			8	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000		£	00000	00000	00000	G0000.	00000	00000	00000	00000	00000	00000	00000	00000	000000	00000.	000.00
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= 1076.7		375.0		28/0	ALMA	-2.227	-1.134	036	1,010	2.091	4.284	6.448	8.629	100.01	12.968	15.133	17.346	19.527	21,650	GEAD! ENT	27/ 0	ALPHA	-2.268	21.13	- ,083	1.615	2.128	4.344	6.566	A. 7:16	10.960	13.151	15.364	17.577	19,406	22.001	GRADIENT
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(F02102) (50 JAN 74) HARAMETRIC DATA LEC B TPT 643 CAIGE S26CSEZ6FTWTNEBR3VSW16

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	n	H			0. 26/ 0		AL PHA	-2.296	-1.194	160	1,032	2.134	4.397	4	212.0	11.022	13.235	13.487		GE 5 61	10000	22.127	GRAD! EN	0. 25/ 0	:	AL HA	-2.33	100	440	2.166	4.422	6,663	Ø 2	11,110	13,337	13,634	17.875	20.116	22.30:	GENERAL
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(30 JAN 74)

PARAMETRIC DATA

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							8	45.50	11663	24910	-,24296	23760	23404	11622	22675	-,23182	25599	28578	32703	37572	.40541	42002	8000		4.09 68.	Ę	- 44024	AOFCF -	31656	PC908	68.608.	- 30817	31394	33168	36376	40 565	44323	. 20533	.06328	
	DOG THCHES	300 INCHES	SOO INCHES			RN' I	į		23676	-,25195	-,24560	24025	23651	23029	22.505	22238	242TB	-,27246	31644	36915	45 A 6 8	41213	40100	166000	# JAB	!	45	44808	6841		FC008 -	7.19GE	8	-,32402	.35584	40275	- 44101	50363	.00331	
	= 1076.7	۶. "	375.0			24/ 0	;	ALMA	-2.368	-1.231	990	1.090	2.231	4.493	6.788	9.032	11.337	13.539	15.834	18.114	196	2	201010	GRADIENI	. 23/ 0		ALPHA	-6.368	161.1.		20.1	603.3	932	111.6	06.61	13.645	440	10.01	GRADI ENT	
	AEF = 2690.0000 \$4.FT. 1048	474.9100	E 936.9400	0410. # 3		CN M'R	i .	₩	Q. 6.	186.	186.	156.	156.	OR 6	06 6°	066		G of		200		7. 9	26.		č v		+0 ¥	086.	U86.	Def.	J#6.	000	Joe.	7000			i e c	200		
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(ROZIGZ) (30 JAN %)

PARANETRIC DATA

LAC B TPT 658 CALDS BEACSEZSFTMTNERRSVSWALLS

PEPERENCE DATE.

200 000 E NOA313 0001 E NOA313 0001 3514 = 90514P = 900557 = 7 ### 2680.0 00 50.FT. OMP = 1076.7000 IMPHES UPER = 1076.7000 IMPHES PREF = 1076.7000 IMPHES PREF = 375.0000 IMPHES CALE = 10.50 SCALE = 10.50 SCALE

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1.256	-2.337	. 3329	00000	26875	00000	1500.	30030
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35.5	11.509	3m33	37U98	38359	00000	00000	20050.
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.2.5	17.640	44090	43739	43603	20000.	G3030.	00000
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(ROZIOS) (SO JAN 74)

PARAMETRIC DATA

LIC & TPT 646 CAIDS B26C9E26FTWTRERSWSW16

REFERENCE DATA

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COC 6 TPT 666 CA106 326C5C26FTHTPC86.1VPM.16	"EFBRENCE DATA	SAFE = 2000,0000 53.51, MARP = 1076,7000 NARFS JRE = 474,5150 NARES MARR = .0050 NA.55 TEE = 936,6800 NARES ZMRP = 375,0000 NARES SAALE : .0190 SAALE

RWL = 3,78 GRADIENT INTERVAL = 14,057 5,80

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į	20000	00000	00000	20020	00000	30000	00000	90000	00000	20002	gouda.	00000	20000	3 0060.	VAL = -5.0	CP4	00000	60000	50000	20000	20000	nesso.	00000	02000	00000	00000	30000	.0000.	30000
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(R02103) (30 JAN 7

PARAMETRIC DATA

LAC & TPT 666 CAIDS BESCHEZGFTHTHEBREWHIS

		RETO	RETERENCE CATA	₹				MARAMETRIC DATA	¥	
5	M	2690.0000	3	e X	*	- 1076, 7000 INCHES	BETA #	000	SPOSIAN =	29.990
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300	¥	934. 6600	INCHES	2447	н	24AP = 375,0000 1NCHES	, poor			
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8.	8	39842	-,34389	-,33751		34044	SECT	S7390	-,41292	-,44630	ON-000	-, 522: 7	91800.	4.25	Ë	35724	35547	355n	39921	36037	36609	37693	-,39369	42855	84948 -	09927
15 PE	£	96465	34403	33872	33914	34276			41107	44904	49235	52669	.50243	ENV.	£	35635	3 3DA2	.35336	. 3 59 30	36186	.30801	3AD9 F	399.78	43230	45290	35000
32/0	AL PA	-2.312	910	28.	195.4	000	971.6	100	13.677	E O S	18.247	20.224	RADI ENT	. N. C	AL MAA	-2.293	010	2.310	4.593	6.921	22.6	11.553	13.482	16.183	16.49	PANDIE .
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LRC & TPT 668 OAID6 B26CDETGF7WTNRBRBYSWAI6

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						GRADIENT INTERVAL =	Ē	23547	22798	22533	-,22968	24254	25324	-,25688	- ,25132	24495	-,23493	27577	-,32568	-,33912	.00097	GRADIENT INTERVAL = -5,007 5,00	ŝ	25500	24293	23794	23760	25183	25738	2 5099	-,25219	-,25256	-,29851	-,34314	10676	.39531	.00267
						2.05 GRA	ğ	21437	20949	20539	20488	e 1202	2UR91	21058	21469	22035	23436	26386	29376	30390	.001 59	3.17 98	8	23989	22828	22212	-,22005	22395	22593	-,22944	-,23588	2 50 50	19662	31 390	34189	35550	.00290
	i.	1076, 7090 INCHES	DOOD INCHES	375,0000 INCHES		באר =	ă	- 21511	20785	20123	.,19921	20156	20433	20652	20531	20471	21745	25795	292 NO	.3005.	.5056	RN/L=	£	- 24034	22TT	21 700	21018	21395	21755	21 M9	21651	-,22783	27967	31341	34233	35637	.00474
		= 1076	11	ĮI.		. 42/ 6	3	200	510	20.2	4.097	6.147	8.215	10.245	12.27	14.345	16.406	18.454	20,554	23,356	GRADI ENT	. 41/0	ā	10.10	.001	2.105	4.278	6.359	A.558	10,644	12.777	14.939	17.151	19.259	21.393	22.242	GRADIENT
REFERENCE DATA		Ė.	1+CHES	= 936.6800	SCALE = .0190 SCALE	GN No.	•	HOME COME	35C.		046.	349	.350	OSE.	088.	350			Sec.	(3.5)		GN NOE	3	000	G G G G G G G G G G G G G G G G G G G	666	665	665	668.	665	866	666.	009	665.	009	0.99.	



TABULATED SOURCE DATA, LARC 8 FT. TPT 666 (CA1D6)

LRC 8 TPT 668 CA106 525C35C7WTN28R5V8W16

(RQZ104) (30 JAN 74)

PARAMETRIC DATA

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5	SPOBRK = ELEVON = ALLRON =
PARAMETRIC ON IN	.000. 000. 000.
	BETA = SOFLAP = RUDOER ::

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RADIENT INTERVAL =	8	26849	25165	24304	24348	24869	25499	25904	26462	30162	34622	-,39319	43437	44721	ex 600.	GRADIENT INTERVAL =	Ê	31437	28851	-,28569	~.28077	2020	629 62'-	28789	-,29667	32349	35869	41305	47404	- 50384	.00460
3.78 %AA		25790	24910	23101	-,22705	-,23036	23543	-,24090	25595	29419	-,32422	-,35166	39696	41299	.00 502	3.97 GRA	ŝ	29650	- 29043	- 27645	156931	26912	26017	-,26462	28274	31242	34310	39230	44153	46775	.003 YS
RWL =	Ę	2.00.0	24378	86722	21529	21353	21714	-,22519	23079	26384	30546	34388	39425	41124	.00685	FINCT.	ğ	0000	OF CASE	26.53	25424	2848	्यू ध्	25590	-,26782	29491	-,32976	38094	43726	46233	.00678
0 /04	418	ACT 04	25.2		K .	603	6	10.994	13.199	15.430	17.630	19.847	20.066	52,909	GRADI ENT	39.0	i	אריהא	505.2-		4,486	0C#	915	11 145	13.414	15.654	17.929	2	2 2	23.237	GRAD! ENT
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(ROZIDA) (30 JAN 74) LRC 8 TPT 668 CAIDS BZ 6C9EZ 6FTMTMZ8R5V8M16

PARAMETRIC DATA

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5	SPOBRK : ELEVON = AILRON =
PAKAMETIKI CATA	.000. 16.300
-	BETA = BOFLAP = RUDOER =
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CPZ CP3 CP4 3896940386 .00000 3804839692 .00000 3802340389 .00000 3862140389 .00000 3862140389 .00000 3024240389 .00000 402624299 .00000 4732140379 .00000 317340379 .00000 317340379 .00000 317340379 .00000 31744038 .00000 31774330 .00000 40484298 .00000 40484298 .00000 40484298 .00000 40324272 .00000 40324272 .00000 40324272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000 43224272 .00000	CP3
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